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THE CAVALRY JOURNAL

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Troops of the 1st Cavalry Division, which landed with U. S. invasion forces in the Philippines, advance on a Japanese machine-gun nest on Leyte Island.

NOVEMBER-DECEMBER, 1944

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Organized November 9, 1885

The aim and purpose of the Association shall be to disseminate knowledge of the military art and science, to promote the professional improvement of its members, and to preserve and foster the spirit, the traditions, and solidarity of the Cavalry of the Army of the United States.—Article III, Constitution.

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Published Bimonthly by The United States Cavalry Association

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CHRISTINE HARBOUR, *Associate Editor*
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1st CAVALRY DIVISION IN PHILIPPINES

Among the troops participating in Uncle Sam's return to the Philippines are units of the 1st Cavalry Division, recent conquerors of the Admiralty Islands. *Above:* Cavalrymen, advancing along a thoroughfare in the village of Pawing, clean out the last of the enemy from the area. *Below:* Cavalrymen cross a water tank trap, one of the many futile barriers erected by the retreating Japanese on Leyte Island to retard the onslaught of American invaders.

1st Cavalry Division

In the Admiralty Islands

The same troops, whose guidons fluttered westward over the vast reaches between the Little Big Horn and the Rio Grande, now blaze a trail through islands and jungles far across the Pacific

Preparation

DURING early January 1944 the staff of the 1st Cavalry Division convened at Alamo Headquarters to participate in the planning of the invasion of the Admiralty Islands. The first elements of the division which arrived prepared new camp sites, furnished labor at the docks, and underwent meager but intensive jungle training.

Instructions were issued by the commanding general for the staff sections to make a terrain study of the Admiralty Islands, to formulate from all available data an enemy order of battle, to compile logistical data, and to make an estimate of the situation. The commanding officer, 7th Amphibious Fleet was advised and assisted in preparing amphibious training schedules contemplated to begin early in March.

After the GHQ directive was issued for the campaign to take place early in April, planning began in earnest. Frequent conferences were held with the representatives of the fleet and air forces assigned to support the operations. Training became progressively more comprehensive; tempo of the air action became more extensive. The very air seemed to be filled with an effort to outrace time.

Late in February, reconnaissance indicated that areas of the islands were being evacuated, and a radio message implied that the division must be prepared to strike *immediately*. Plans were prepared to make a reconnaissance in force of the Admiralties and to support the reconnaissance force with as many combat elements of the division as available shipping permitted.

Landings

The stage was set and, on the morning of February 29 the curtain was rent asunder by a devastating naval and aerial bombardment of Los Negros Island. The invasion force which landed immediately following the heavy bombardment was comprised of elements of the 5th Cavalry supported by detachments of 1st Cavalry Division artillery, engineer, AA, medical, signal, and quartermaster units. (See Maps 1 and 2, Page 4.)

The troops quickly secured a beachhead within Hyane Harbor, easternmost harbor of Los Negros Island, near the end of the valuable Momote airstrip, and received their baptism of fire in what the United Press called "one of the most brilliant maneuvers of the war." Only 750 miles from Truk and 1,300 miles from the Philippines, the Admiralties comprise the one remaining link to be closed in the Allies' ever-tightening chain around the Bismarck Sea. The severance of the only remaining line of supply to Rabaul and Kavieng, those two much-heralded, impenetrable bastions of the enemy's defensive system, left 50,000 "Sons of Heaven" to starve, die or rot.

This masterful strategic stroke, combining perfectly coördinated air, land, and sea attacks, caught the enemy completely by surprise. William Courtenay of the *Sunday Times*, London, states, "They (the Japs) had evidently regarded the prolonged air attacks upon Rabaul as a prelude to invasion there, and turned their backs on the Admiralties. Also, when they began to fear that there might be an attack upon the Admiralties, they concentrated their strength and guns around Seeadler Harbor and the north side of Manus Island, at the former seat of government, Lorengau."

Supporting naval forces of a destroyer squadron remained off-shore during the entire operation and, on call from the forces ashore, delivered devastating barrages. Their support of the ground forces was a very material factor in the success of the operation. During the initial approach, gunfire from the destroyers silenced hostile batteries of machine guns and 25mm guns, which were delivering effective harassing fires against the landing craft passing through the narrow harbor entrance.

Although heavy rains greeted the landing force, casualties were described as "light." Up until midnight no organized enemy counterattack had been offered; opposition was confined to sniping and attempted infiltration through our perimeter.

At the close of the first day, the landing force had secured the beachhead and had seized the Momote Airstrip, including dispersal areas. The assault was

Map 1. Encircled area shows strategic Admiralty Islands. Note relation to Rabaul, Truk, Palau, and Philippines.

suspended in order to establish a defensive perimeter against the numerically superior enemy force. (See Map 3.)

Enemy Counterattacks

On March 1, during early morning darkness, the enemy attempted his first counterattack against our lines around Momote Airfield. Slight infiltration and spasmodic in-fighting occurred all night. In an obvious attempt to drive our forces back from the drome, the Japs made a desperate predawn attack but were repulsed with heavy losses.

Daybreak saw the 5th Cavalry mopping up remnants of enemy infiltration and consolidating its own positions. General Chase's troops were carrying out the instructions of the commander in chief, "You have all performed marvellously. Hold what you have taken, against whatever odds. You have your teeth in him now. Don't let go."

The Japs' second try at cracking our lines gave evidence throughout the night that the fight was on, and that a determined enemy was trying to break through no matter what the price.

On the following day the original landing force was reinforced by the remainder of the 5th Cavalry, landed from LST's on the side of the site of the original beachhead, after enemy positions opposite the American perimeter had been strafed by B-25's flying at tree-top level. The first evidence of the highly propagandized enemy air might occurred when two enemy planes made a sneak raid on the landing beach with no damage or no casualties resulting.

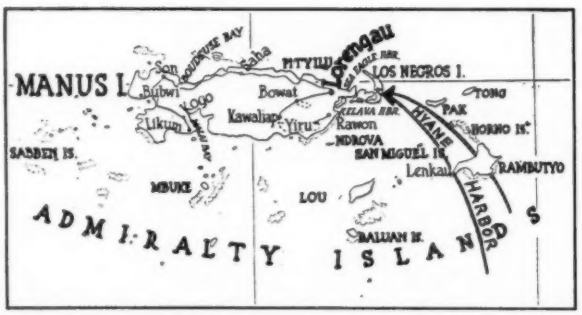
The newly arrived troops, who had been quickly unloaded with equipment and supplies, were briefed on enemy tactics, and prepared to enter the fight. The perimeter was extended to cover the entire eastern edge of the airstrip. During this entire period no enemy naval reaction had occurred. Our destroyers continued to patrol the eastern coast of Los Negros at will and shell targets on call from shore. As the landing ships, which had brought in the reinforcements pulled out, however, they met enemy fire from south of Hyane Harbor entrance.

Jap Night Attacks

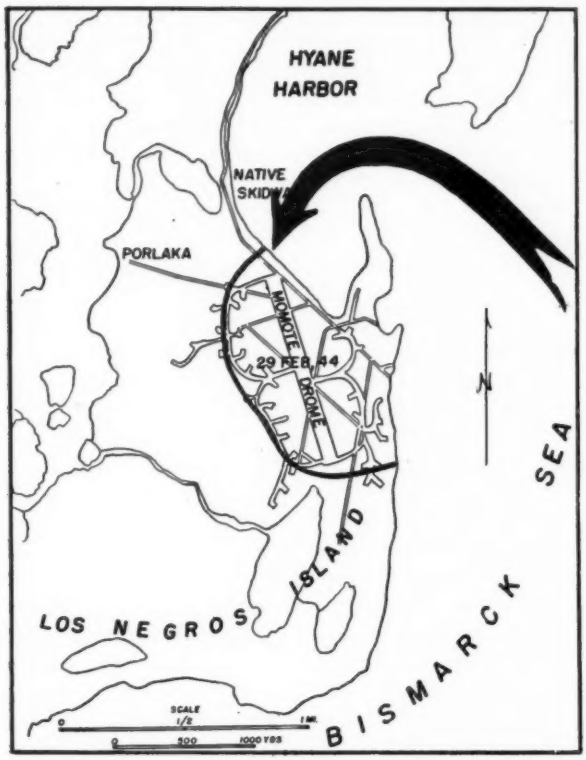
That night repeated Japanese attacks against the North and northwest sector of the 5th Cavalry lines helped add to the enemy's steadily increasing casualties. The Japanese had apparently determined their scheme of maneuver and the sector on which the main attack was to be launched. Repeated failure of their relentless night attacks evidently did not change their minds. They continued hammering away at the same point in a gigantic, all-out effort to break through the perimeter. Their foolhardy, unrealistic determination proved expensive. Their failure was indeed the turning point in the campaign. From that time onward the coördinated attacks of the cavalry drove the Japs backward continually, incessantly, never allowing them to get set, until at the end, the bulk of the enemy force lay prostrate on the field of battle. The scattered, ineffective remnants were left to live like animals in an inhospitable tropical jungle.

Shortly after noon on March 3, supported by a 75mm howitzer battalion which arrived with the support echelon, our forces attacked and extended their perimeter. The extreme western taxiways and revetments of the airstrip, previously the enemy's front line, were occupied by the advancing 5th Cavalry. At nightfall these newly occupied positions formed the outline of an enlarged perimeter.

By midnight the Japanese counterattacked and penetrated the northern sector of the perimeter as far as the airstrip. The defense of this sector had just been assumed by the newly arrived units of the 5th Cavalry.



Map 2. Arrow points to Hyane Harbor, Los Negros, where elements of the 1st Cavalry Division landed February 29.



Map 3. Close-up of Hyane Harbor and Momote Airdrome. Black line is perimeter of defense at close of first day.

Their first night on this isle was a far cry from the storied versions of languid tropical nights bathed in soft moonlight and covered by a peaceful, serene, star-studded sky.

The Jap began to use some of his widely publicized ruses, frequently drawing our automatic fire by catcalls and noises, then attempting to exterminate our positions by chattering machine guns. One desperate charge was made by a force running and singing "Deep in the Heart of Texas," apparently trying to give the impression that they were having a good time. When the shooting was over 100 dead fanatics were counted near one revetment.

During the night, the Japs tried another favorite trick when they tapped the phone wires connecting the mortar batteries with our forward observers. A clear voice in perfect English called, "For God's sake, lift your fire; you're hitting your own troops." Unfortunately for the Jap, the party on the other end of the line was wise to the ruse, and called for an even heavier concentration.

Corporal Bill Alcine, *Yank* staff correspondent, accompanying the 5th in the landing, offers the following story:

"The dead Japs were big men, Imperial Marines, and fresh troops. All were in good condition and well equipped, cool, tough and smart. A large number of them could evidently speak English."

By the early hours of March 4 Japanese night attacks had reached a point of desperation, and our successful defense, especially on the northern sector by that part of the 5th Cavalry which had landed only the day before, obviously left the enemy forces seriously depleted. Following the wild attacks Jap carcasses were piled up three and four deep in front of the cavalry position.

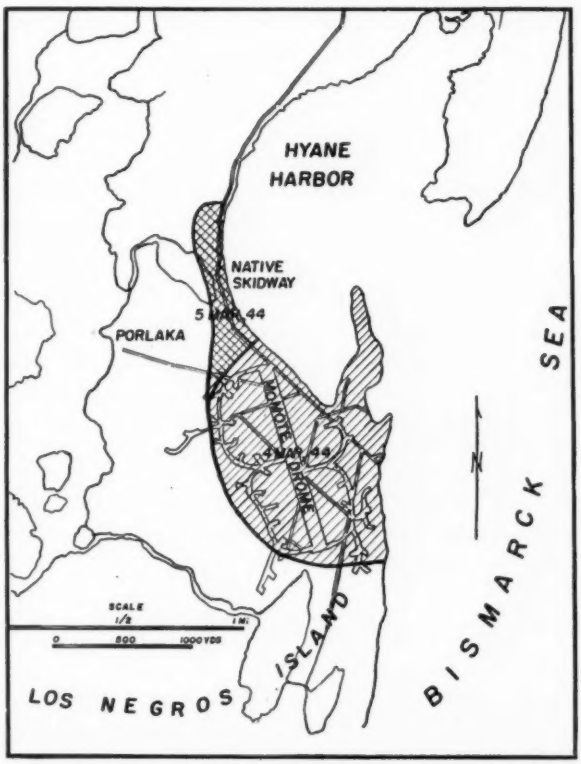
Just before noon elements of the "Gary Owen" 7th Cavalry landed at Hyane Harbor, and were sent immediately to relieve the 5th Cavalry units which had been in combat continuously for 4 days and nights.

Extending the Perimeter

An attack north along the causeway, planned for the following morning (March 6), was to be supported by elements of the 12th Cavalry, scheduled to land early that morning. But the division commander decided that it would be advisable to clear the causeway before the arrival of the 12th for fear the enemy might repair their damaged bunkers during the night and be strongly entrenched by morning. The general thereupon directed an immediate attack to the north, and by dark the ground north and west of the airstrip was firmly secured. (See Map 4.)

Meanwhile, patrols from the 5th Cavalry scoured the extreme southern end of the island and west toward Porlaka in preparation for an attack against the latter place the next day.

Concentrated enemy mortar fire continued all night



Map 4. Checked area indicates region of attack north along Native Skidway in preparation for landing of 12th Cavalry.

long, but a definite lull in enemy counterattacks in force had taken place. Our forces were now in a position to drive an ever-widening wedge, split the enemy's forces, and effect a clearance of Los Negros.

On the morning of March 6, the 12th Cavalry landed ready for battle and immediately moved northward to pass through forces of the 7th Cavalry advancing toward the Mokerang peninsula. These combined forces succeeded in clearing Salami Plantation and in securing an excellent beach in Seeadler Harbor for the landing of the remainder of the division. This action precluded an unwieldy and perhaps disastrous congestion in the restricted beachhead at Momote. A new base for vigorous offensive action against fortified garrisons was established on the south side of Seeadler at Salami.

A *Yank* staff correspondent gives the following description of the advance over the Skidway for Salami Plantation: "Eager for a fight, the men stormed through the sniper-infested territory, averaged an incredible 3½ miles an hour, arrived at Salami at 1630, and then established a beach where LST's carrying other units of the division were to arrive later."

In the attack to capture a bridgehead at the landing beach on Salami Plantation, the cavalrymen discovered that the Japs had again been taken by surprise and caught with their backs turned. All fortified positions, including machine guns and heavy weapons, strongly dug in, faced toward Seeadler Harbor in anticipation of an amphibious landing. The enemy was unaware of the direction of attack until the cavalrymen had moved in on top of his defenses and quickly wiped them out.

The Japanese battalion, known as the Iwakami Battalion, in position along the Native Skidway, lost 600 of their strength, and the remaining 200 were directed to retreat to Papitalai Mission. Our advancing troops encountered most of the remnants of this battalion, together with about 100 other miscellaneous troops, desperately running into the water in an attempt to reach the Papitalai beach by swimming and using native canoes. So disorganized was their retreat that many of the panicky Japs were frantically paddling their canoes with their hands, not having had time to secure paddles from the beach and from the native huts. No more than 80 of this unit reached Papitalai.

On their advance west of Momote airstrip toward Porlaka our troops uncovered large stores of equipment and provisions, including quantities of Japanese beer and sake. The beer was quickly disposed of. So was the sake, but in a different manner; the cavalrymen didn't think it very palatable.

As soon as the 5th Cavalry had occupied Porlaka, the Jap positions at Papitalai Village and Papitalai Mission, 500 yards west across the strait, were bombed and strafed by our air units.

The Japanese position there constituted a serious threat to a rapid culmination of the campaign on Los Negros Island. If given time, the enemy could easily render his position, protected as it was on the front by a wide expanse of unfordable water, well nigh impregnable.

Amphibious Landings

Early on the morning of March 7 a volunteer patrol was dispatched to gain vital information in sufficient time for an attack to be launched before the enemy could reorganize, regroup and deploy his forces to meet it. The reconnaissance force crossed the strait between Porlaka and Papitalai Village in rubber boats, under hostile fire and gained knowledge of the disposition of enemy troops, which enabled us to press our attack successfully. (See Map 5.)

The approach to Papitalai Mission Station was made in amphibious tractors. Upon reaching the beach, an advance patrol located a trench in which an enemy machine gun crew was lodged and, by killing the occupants, enabled the remainder of the platoon to occupy the beachhead without casualties.

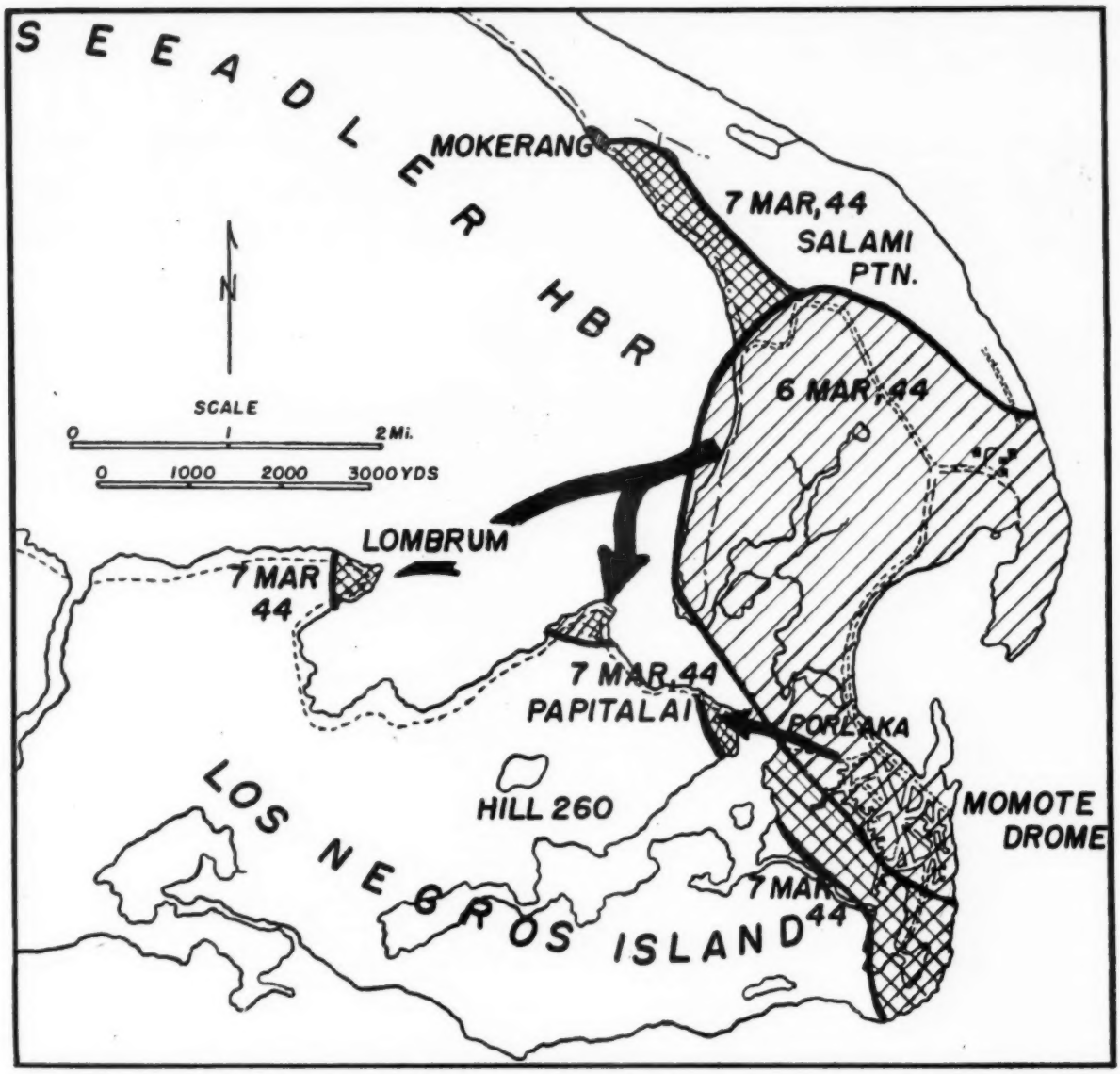
Withstanding a severe counterattack, the platoon held the beachhead against a numerically superior force which was striving determinedly to drive the cavalrymen back into the sea. Its ability to hold that line for almost an hour before supporting units could be placed on the shore was the difference between a slow, steady, methodical performance and a brilliant overwhelming success.

Following heavy mortar and artillery barrages, which literally flattened the ground and coconut trees on Papitalai Village and Papitalai Mission, additional elements of the 12th and 5th Cavalry landed from rubber and canvas assault boats. Large quantities of supplies and a well-equipped hospital were captured.

In the afternoon, units of the 7th Cavalry moved over water and occupied Lombrum Point. These actions secured two additional critical terrain features from which the Japs could make untenable the greater portion of Seeadler Harbor and render any landing in the Salami Plantation area extremely costly. The areas now occupied were Salami Plantation, Mokerang Plantation, Papitalai Mission, Papitalai Village, Porlaka, and the greater part of Momote Plantation on the southern end of Los Negros.

"General Marshall has sent me a message of congratulations on the skill and success of the Admiralties operation, and expressed his admiration for the manner in which the entire operation was handled. He requested that his congratulations be handed on to General Krueger, General Kenney, Admiral Kincaid, and particularly General Swift and his officers and men for the magnificent showing they made in the first fight.

MacArthur."



Map 5. By end of the eighth day an airfield had been captured, the island cut in half, new beachheads established and Seeadler Harbor secured. Landings at Papitalai and Lombrum were made by elements of 5th, 12th and 7th Cavalry.

Mopping Up

The following day our troops advanced 800 yards west of Papitalai in their drive to mop up the remaining Japanese strong points on the island. Daylight operations consisted mainly of patrolling, while intermittent enemy attacks occurred during the nights. Mortars and artillery concentrations were constantly placed on enemy positions located by the patrols. Large numbers of enemy dead, evidently from this supporting fire, were found. Strong opposition was met by one patrol attempting to reach the high ground commanding Papitalai Mission but the rate of enemy casualties continued to mount.

The enemy's disorganized retreat under heavy fire during the next several days degenerated into a rout and the cavalry had an opportunity to consolidate the territory now occupied and disperse patrols in all directions. Large dumps of Jap food and equipment, abandoned intact west of Papitalai, indicated his hasty withdrawal. The first prisoner of the 1st Cavalry Division's campaign in the Admiralties was captured in this area by a reconnaissance patrol.

In order to intercept the Japanese retreating westward from Papitalai, elements of the 7th Cavalry pushed inland from Lombrum Plantation.

On March 9 the commander of the 1st Cavalry Division watched the "grand opening" of Seeadler Harbor, as a convoy of LST's, escorted by men-o-war, glided through the northern channel to the harbor. Aboard these ships were the remaining units of the 1st Cavalry Division, prepared to finish the conquest of the Admiralties.

(Next issue: Conquest of Manus Island.)

Employment of Cavalry A

by Lieutenant Colonel Paul L. Burk

ACTUAL experience has shown that judicious use of both advocated methods of employment will invariably prove the value of the M-8 assault gun in terrain ranging from close-packed hedgerows and narrow sunken roads, to open plains and rolling hills. Instances cited are presented for illustration only. The conclusions are for the reader.

Direct Fire Employment

In this organization, when the situation is fluid, assault guns and tanks are most often employed in close support of the reconnaissance troops. Under these circumstances, one platoon of assault guns and one platoon of tanks is normally attached to each of the reconnaissance troops. The assault guns are employed in the main for direct fire at targets of opportunity on the respective troop front rather than as a mobile pool for indirect fire in general support of the squadron. In this manner, timely fire power of the assault guns is immediately and always available to the units which need it most.

Conversely, the vulnerable assault guns are provided with security through their proximity to the reconnaissance elements which they support. In many cases, it is this margin of fire power which can and does break a stalemate and turn the tide of battle. How well this theory works in practice is evident from the following illustrations chosen at random from three consecutive days of activity.

September 6:

1st Platoon (2 M-8 tanks with 4-men crews), attached to squadron headquarters, used covering fire methods in the vicinity of Rienne, Belgium, and by direct fire caused heavy casualties among foot troops.

2d Platoon, attached to Troop C in the vicinity of Louette St. Pierre, Belgium, engaged a German Panzer Kw VI (Tiger) tank with direct fire at 2,800 yards. One assault gun, covered by the second, blew off a track with the first HE round and registered a direct broadside hit with the second round—an HE AT shell. This latter round set the Tiger tank on fire, causing it to blow up within a few minutes. Similar tactics were employed later in the day in the vicinity of Gedinne, Belgium. In this case, an enemy half-track personnel carrier was observed just as it pulled into position. Two enemy crewmen, engaged in camouflaging the vehicle, were destroyed with the vehicle by the assault gunfire.

While attached to Troop A in vicinity of Membre, Belgium, the 3d Platoon took up a direct fire position under cover of darkness on the crest of a hill overlooking an enemy 150mm rifle position previously located by a Troop A reconnaissance patrol. At first light, one assault gun fired on the position while the second gun covered. Infantry, moving through the position later, found 38 dead, a number of wounded, and the enemy gun and a half-track vehicle behind the gun position completely demolished.

September 7:

The 2d Platoon, while attached to Troop C, covered roads leading to and from Our, Belgium, while a reconnaissance platoon moved in to reconnoiter and outpost that town. An enemy self-propelled 57mm gun and half-track vehicle were destroyed by direct fire at 1,800 yards when observed approaching the town from the opposite side. In the vicinity of Maissin, Belgium, identical tactics were employed. Here, both guns opened direct fire on two heavy ration vehicles and a third, smaller enemy vehicle. During this action, 6 Germans were killed and three were captured as a direct result of the assault gun fire.

The 3d Platoon was outposting Troop A command post in the woods along the main road leading out of Paliseul, Belgium. The town was under mortar fire and a platoon of Troop A plus an infantry complement was moving on the next town. The assault guns changed position to engage two enemy half-track personnel carriers moving into the town from another direction. Both of these vehicles were destroyed by direct fire at 100 yards. There were many observed enemy personnel casualties. One enemy self-propelled 150mm gun, attempting to move into Paliseul through a back trail was engaged with direct fire at 300 yards. A direct hit on the recoil cylinder of this gun knocked it out of action and forced its crew to abandon it.

September 8:

While the 1st Platoon was attached to Troop C,

★Executive officer, "X" Cavalry Group (Mecz), Western Europe.

"X" CAVALRY GROUP (MECZ)

How can cavalry assault guns be employed most effectively against the enemy? Answers to this question produce two schools of thought from officers of "X" Cavalry Group—the "direct fire" and the "indirect fire." Both theories are equally justified by results achieved in continuous combat with the enemy in Europe since June 6.

Assault Guns

Signal Corps Photo

Members of a cavalry reconnaissance unit move their M-8 assault guns into position to fire on retreating Germans near Heure-La-Remam, Belgium, only one and a half miles from the Netherlands border. Picture was made September 9.

during an advance on the village of Villance, Belgium, the reconnaissance elements were halted by heavy mortar fire. Locating the enemy observation post on the crest of a hill, the assault gun crew immediately opened fire and knocked it out. The mortar fire ceased and the platoon was able to move on. This was repeated on the other side of the village when the same assault guns knocked out an enemy machine gun nest so that the reconnaissance elements could again advance. Later, on the same night, elements of Troop C were stopped by a road block, with covering enemy fire by bazooka, machine gun, mortars, and artillery. Our assault guns laid direct fire at enemy gun flashes. This counter fire permitted the reconnaissance elements to withdraw safely. Next morning, infantry and reconnaissance elements in that area found 4 destroyed enemy half-tracks and 11 enemy dead as the result of the 75mm fire of our guns.

Advantages of Indirect Fire

Although the assault guns may be employed very effectively for direct fire, certain of these "direct fire" missions can be accomplished as well by indirect methods of fire, with a great deal less risk to personnel and equipment. Points in favor of employment for indirect fire are:

1. The entire fire power of the assault gun troop may be brought to bear on a single target.
2. The assault gun troop is able to cover and support the entire squadron front and possibly its flanks.
3. The guns are not exposed to enemy fire and observation. (Counter-battery fire on this front has been neglible against this type of self-propelled artillery.)
4. The guns are able to repel enmasse any sudden threat on the squadron front or flanks.
5. Indirect artillery fire gives a distinct psychological advantage to the user. It breeds confusion, fear and panic among enemy troops because they cannot see what is shooting at them and consequently cannot combat it instantly.

Employment of Indirect Fire

In this organization, normal employment of assault guns for indirect fire missions consists of placing the 6 guns of the troop in battery position in support of the entire squadron. Radio communication directly between the reconnaissance platoons and the assault gun troop can be established on the channel frequency of the assault gun troop. In this manner, reconnaissance platoons request supporting fires direct from the battery and the reconnaissance platoon leader acts as the forward observer.

When the advanced elements of the squadron have moved out almost to the effective range limit of the guns, one platoon of two guns is sent forward several thousands yards to take up a new battery position while the balance of the troop remains in position, supporting the squadron. The remainder of the troop follows as soon as the forward platoon is in position. Excellent results have been obtained by using this leapfrog method. Some examples follow.

On July 10 in Caumont, France, the forward observer (platoon leader) reported a tank and personnel moving along a road. A concentration was fired with direct hits on tank and personnel. Casualties were caused and the tank was halted. An infantry patrol in that area the following night reported that the tank had been knocked out and burned.

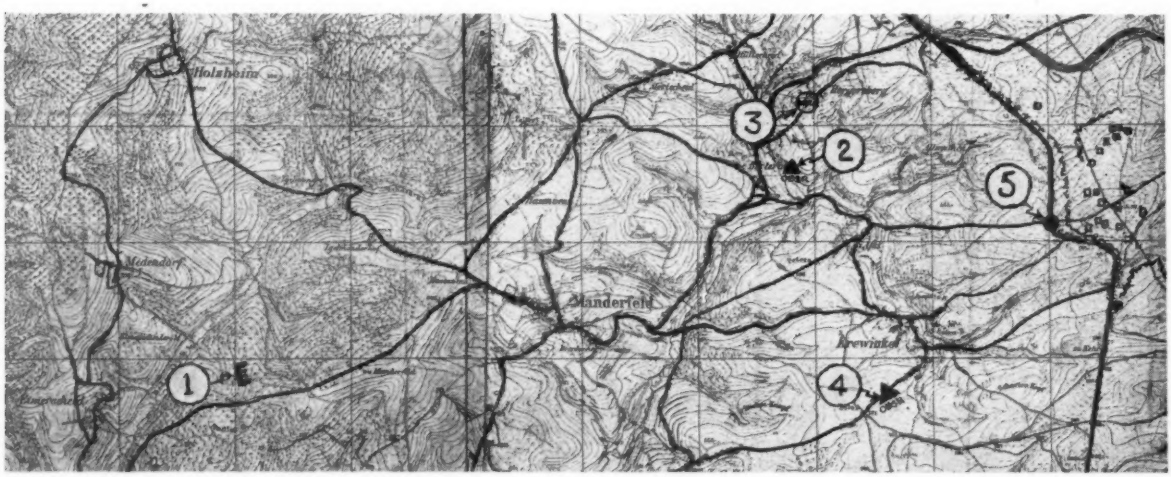
On July 26 in St. Pierre le Semilly, France, the troop in battery position fired preparation for and supported a dismounted cavalry attack on St. Pierre le Semilly in the break-through from the beachhead in Normandy. Hedgerows were the dominant terrain features. HE superquick and tree bursts were used for the preparation fires. Light tank sorties were supported by time fire. In the afternoon, attacking forces were pushed back by a German counterattack. Heavy WP fire was placed so as to blind and burn the enemy. This enabled the attacking force to reoccupy the hedgerows and road. Dead Germans—17 found along hedgerows, 5 along the road, and 3 in the village; 7 wounded evacuated through division aid station; and a large number of dead Germans evacuated by their own troops before the village was taken—indicated the effectiveness of the fire. The bodies of many of these casualties had been hit with shrapnel or burned by WP.

On July 27 in St. Pierre le Semilly, France, the forward observer picked up an enemy column entering a wood. Fire was adjusted on the column. Direct hits were observed on two half-tracks, one cargo truck, and one command car. A column of personnel observed leaving this same wood toward the front also received direct hits which caused casualties. Effects of a further concentration on the wood itself could not be observed.

On August 3 in Etouvy, France, the 3d Platoon laid a smoke screen to prevent the enemy from observing the effect of his 88mm fire on the squadron during the attack on Etouvy. No vehicles were lost after the screen was laid. Shortly thereafter, a friendly artillery observation plane dropped a note tied around a wrench, giving the coördinates of a self-propelled gun which was firing on the squadron. Fire was placed on this location without observation. The gun was later reported to have been knocked out. Fire was also laid on other known enemy gun positions but the results could not be observed.

On 5 September in Hargnies, France, two reconnaissance troops, one platoon of medium tanks, and one assault gun troop (less one platoon) attacked the town of Hargnies which contained a complement of between 300 and 500 known enemy SS troops, reinforced by 4 or more tanks and self-propelled guns. Terrain was not suited for a mounted attack. The only avenue of approach was down a road containing a mined road block which had stopped a medium tank. These circumstances prevented the use of direct fire. The assault guns were placed in battery position near the top of a hill to the west of the town. Though the only map available at the time was of 1/250,000 scale, the town was shelled by the assault guns and the enemy driven from it. Two enemy tanks were also driven by this fire from positions defending a road block near the town. One of these tanks, firing into the woods over squadron personnel, had been obtaining tree bursts and causing serious casualties. Additional fire from the assault guns drove 50 enemy from a road block on the far side of the town and allowed a reconnaissance troop to enter the town from that side. Casualties were observed from the observation post, but it was not possible to determine them exactly because many were evacuated by the enemy before the town was taken. Net result of the assault gun fire was that the squadron succeeded in occupying the town after dark and was able to move on through it after daybreak.

On 9 September at Champlon, Belgium, while the squadron was advancing to the west from St. Hubert, the assault gun troop (less one platoon) arrived in the vicinity of Champlon. Here word was received that the first platoon of a reconnaissance troop (reinforced by one platoon of light tanks) had been cut off and the enemy was closing in on its position. The reinforced platoon had already lost one light tank. The assault guns immediately went into battery position



The back of a jeep serves as a desk for these officers of a cavalry reconnaissance unit as they determine the placement of their M-8 assault guns for firing on German positions "somewhere on the continent," September 9.

and opened fire, with the platoon leader of the endangered platoon adjusting the fire. The attack was driven off. Two tanks and a personnel carrier were driven out of town to the platoon leader's front. Direct hits were obtained on enemy infantry to his rear, causing casualties and driving them to the northeast. Additional hits were observed in a concentration of enemy transport in a wood to the south. Thirty enemy vehicles were seen leaving the wood after the shelling.

On 14 September, south of Manderfeld, Belgium, the outposts of a reconnaissance troop reported a platoon of enemy infantry digging in on a hillside above their outpost line. Fire was brought to bear on the target and the enemy was driven over the top of the hill. Observation was very bad because of fog, but 6 or more casualties were seen.

On 25 September at Manderfeld, Belgium, a reconnaissance troop outpost in front of the Siegfried Line observed a platoon of enemy in the vicinity of some houses. Fire was adjusted on the position. Those enemy not hit, took cover in one of the houses. Additional direct hits were observed on the house. In all, 9 casualties were observed. [Positions of battery (Point 1), observer (Point 2), and target (Point 3) are shown on accompanying map.]

On 27 September at Manderfeld, Belgium, an outpost of a reconnaissance troop observed a large enemy patrol forming near a small wood and a haystack. A concentration fired on the patrol caused a number of observed casualties, set fire to the haystack, and disclosed a camouflaged vehicle which was also destroyed. [Position of battery (Point 1), observer (Point 4), and target (Point 5) are shown on accompanying map.] This same outpost adjusted fire upon a house where enemy were seen. Two direct hits were obtained. Stretcher bearers made 7 trips from the building.

Assault guns have returned generous dividends throughout their employment in attack, defense, and pursuit. Their true value may be measured by the fact that they have never been idle during this campaign.

Mechanized Cavalry Retains Tradition of Slashing Advance

by LEWIS HAWKINIS
Associated Press War Correspondent

WITH THE 3d ARMY IN FRANCE, Nov. 1 (Delayed).—Overtaken from the rear by the front line, a group of grounded cavalrymen are fighting a foxhole war here for the first time.

This is the 2d Cavalry Group, the unit which made a story-book dash across France and always moved so fast it never had to dig foxholes.

The group evolved directly from the 2d Cavalry Regiment, which rode first in 1836. While the horsemen of those days would gape in amazement at today's armored cars and jeeps and light tanks, they would applaud the skill of these youngsters in the use of the cavalry's traditional weapons of speed and surprise.

Since it wheeled into action August 1 as a reconnaissance spearhead for the 4th Armored Division in the break-through at Coutances, the 2d Cavalry Group has traveled 160 miles some days and almost certainly has killed 6,000 Germans and taken more than 1,500 prisoners, although it has no means of handling large numbers of captives.

Against the awesome destruction piled on the Germans, the 2d's own losses have been fantastically small. Up to a few days ago its dead numbered fewer than 40 and only 18 were missing.

Units of the 2d were on the Loire River three days after the Brittany break-through, and among towns they reached first were Vitre, Toul, and Luneville.

The odyssey, which ended in a bitter but successful struggle to hold Luneville against a counterattack led by German Tiger tanks September 18, brought the group 25 Bronze Star and six Silver Star awards for bravery and there are that many additional recommendations now pending.

Reading through the thick sheaf of pending and approved awards and talking to the men whose feats they describe, it is easier to understand their lopsided victories.

Take the case of Staff Sergeant Edmond Testa. He was acting as sergeant for a platoon of armored cars and jeeps and more than a score of men on outpost near Bar-sur-Seine one evening. First they knocked out a gun crew, killing one, wounding two and capturing three. Then they killed two motorcyclists and with a single searing volley killed all but three of 25 Germans in a half-track. Sergeant Testa then moved his little band toward his command post at Chaource only to run into a long enemy column.

This presented a problem which he solved in typical fashion. His own description was:

"I ordered my platoon to open fire with all guns, and we raced down the road pouring it into them at 40 miles or more an hour. The column was at least 3 miles long and we went its whole length, killing at least 100 Germans and knocking out 10 vehicles for sure. They were shooting at us with everything from rifles to 88s, but they were so surprised and we moved so fast they couldn't do much."

Sergeant Testa and his men hid out that night in enemy territory and returned to their own outfit the next morning. His casualties were two wounded.

Reconnaissance in N

"Y" Cavalry Reconnaissance Squadron (MECZ) June 6–July 1

IN the early predawn of June 6, four enlisted men, each armed with only a knife, swam to what was supposedly an enemy-held shore on two small channel islands, four miles east of the Cotentin Peninsula, Normandy, and marked the beaches for the landing of a reconnaissance detachment. They were the first American soldiers of the ground forces to land in France on D Day.

At H minus 2 hours a detachment from "Y" Cavalry Reconnaissance Squadron followed these men ashore and investigated the islands. No enemy was encountered, but the islands were found to be heavily mined. Initially, the detachment was slowed up by the mine fields, but despite casualties and the uncertainty as to the presence of the enemy, the unit had all elements ashore and the islands fully occupied by H minus 1 hour, and dispatched the first message to corps headquarters from ground troops.

The detachment held the islands until noon of the following day when it was relieved by an AA unit. The reconnaissance unit then proceeded to its main beach and reported to corps CP in the vicinity of Audouville La Hubert, where it provided local security and patrolled for snipers.

On D plus 10 the remainder of the squadron was landed, and dismounted patrols were immediately dispatched to report enemy dispositions in the vicinity. These patrols infiltrated through German positions and far to the enemy rear to obtain necessary information upon which subsequent operations depended. One patrol (dismounted) infiltrated through German positions as far north as Valognes in one night and returned the following morning to report important information concerning enemy installations between Montebourg and Valognes.

Battle of Rocheville

The squadron's next assignment was to reconnoiter the zone between two adjacent infantry divisions and to maintain contact between them on the advance to the corps objective. From the village of Nehou, one group advanced northwest and one due north. The advance was continued rapidly until leading elements were exposed to hidden enemy artillery, mortar, and small-arms fire. A dismounted reconnaissance disclosed what was believed to be the principal enemy delaying force, estimated as a reinforced platoon, with 2 AA guns, occupying positions on the edge of and in the village of Rocheville.

A coördinated attack soon reduced the enemy to impotence, and resistance was wiped out. That evening a company of friendly infantry moved into the town.

It had been the first pitched battle for the assault troops of the squadron, but they conducted themselves exceptionally well—fighting from building to building, and wiping out all enemy encountered. During this action, one lieutenant not only led and directed the employment of his tank platoons from the open turret of his tank but, entirely disregarding enemy small-arms fire, sprayed enemy occupied buildings and positions with the AA .30-caliber machine gun mounted on the turret of his vehicle.

Dismounted Attack

Two days later, while still in Rocheville, the squadron was attached to an infantry division, with the mission of occupying high ground near les Flagues for the purpose of protecting the division flank. On its approach march, the rear of the column came under enemy small-arms fire. This fire ceased when vehicular .30 caliber and .50 caliber machine guns opened up.

The advance proceeded until the lead elements encountered a road block covered by antitank guns, rockets, and small arms. Preliminary attempts at reducing this obstacle were repulsed, and the troop in assault was forced to withdraw.

The squadron then withdrew to the south in the vicinity of Breuville, from which place it prepared to attack dismounted and seize the high ground near les Flagues. After the artillery preparation the attack jumped off at 1630, with the squadron commanding officer leading the dismounted personnel of Troops "A" and "C". By 1730 the objective had been overrun in the face of heavy fire from small arms and mortars.

Patrols

Shortly after dark the squadron was ordered to relieve an infantry battalion in position and from that position protect the left flank and rear of the division in its assault on Cherbourg.

Anticipating a delay in the relief of dismounted elements of the squadron, the group commander assembled the reserve troops, "E" and "F", and marched them to CR 022198 via les Pieux and Vasteville in order to

cmandy - -

avoid a late start on the new mission. Relief of the dismounted elements of the squadron, which was to have been accomplished by midnight, was completed at 0600 the morning of June 21. They then marched at once to rejoin the rest of the squadron at CR 022198 and arrived there at 1000.

The squadron commander and the squadron executive officer made a personal reconnaissance of the prospective position, contacted the units to be relieved, and planned the actual occupation operations. These positions near Vasteville were occupied for about 8 days, during which time mounted and dismounted patrols were sent daily into and behind the enemy's position.

The following are examples of the patrolling during this period:

One patrol, reconnoitering toward Beaumont Hague, penetrated the enemy's position and located three artillery pieces which had been shelling the squadron's position.

Another patrol led by a lieutenant threaded its way through mine fields, penetrated, and passed through the enemy's lines, and established an observation post and listening post adjacent to the Ste Crox-Beaumont-Hague highway, then being used extensively by the enemy. The lieutenant spent three days and nights in this position, the last two of which he spent alone after having sent back information of enemy movements by all other members of his patrol. The lieutenant, a replacement officer, and his patrol, which consisted primarily of newly joined replacements, were commended for their initiative and the manner in which they immediately contributed to the successful accomplishment of the squadron's mission.

An armored car patrol led by a sergeant had its car overturned when it struck several enemy mines. The sergeant lay for the remainder of the day suffering with two badly mangled feet. The following morning he crawled toward his lines a mile away, when he finally reached friendly troops.

Flank Guard

The squadron next received the mission of advancing on the left flank of the division by assaulting to the northwest abreast of the leading infantry regiment from the vicinity of l'Epinette along the axis-l'Pinette-Rue de Peaumont-Bouchard-Camp Romain. The objective was to eliminate enemy resistance in the Cape Hague Peninsula subsequent to the fall of Cherbourg.

At 0600 June 29 two troops of the squadron advanced on Objective 1 (see map) which they occupied with no opposition other than enemy artillery and mortar fire. On Objective 1, contact was established with the infantry on the right flank of the squadron zone.

Patrols were dispatched immediately to Objective 2 where they drew enemy artillery and small-arms fire from Objective 3. During the day these patrols were reinforced to the strength of two platoons, and they were able to locate several enemy gun positions on Objective 3, against which they directed artillery fire. By dark the division had partially occupied the high ground south and southeast of Beaumont Hague, and all elements of the reconnaissance troop had reached Objective 2. Patrols which were sent to Objective 3 brought back 76 prisoners.

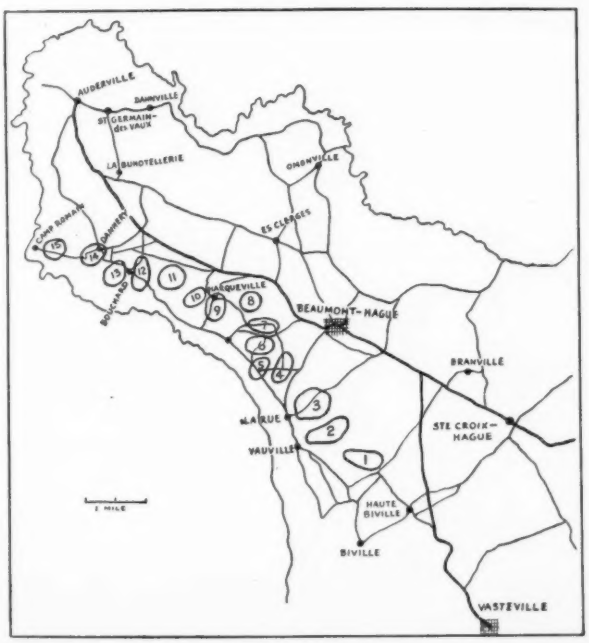
The mission of the squadron remained the same for June 30: namely, protect the left flank of the division by seizing successively Objectives 3 to 15 (see map) as the division advanced.

At 0700, after a 15-minute artillery preparation, the dismounted elements of the squadron attacked Objective 3 in column of troops. Friendly artillery, continuing to fire on Objective 3, pinned the enemy down in his position, which was a strong one, and thus facilitated the success of the attack. Enemy resistance was eliminated and over 200 prisoners captured. The position was consolidated; mopping up continued until noon.

An excellent OP was established on Objective 3 from which observers directed very effective artillery fire onto the enemy retreating on Objective 4.

Against only scattered enemy resistance, the advance to the northwest was continued to Objective 8, where the squadron was temporarily pinched out by the infantry moving almost to the coast in preparation for its attack on Herqueville. As this attack moved out, the squadron continued its advance to Objective 11 where it arrived just before dark.

After dark the squadron continued to the village of Thiebot, captured 19 Germans, and occupied the village until daylight July 1. Then in a dense fog the advance was resumed toward Objective 15.



Further assaults on succeeding objectives was consummated with little organized resistance, and the squadron assembled in Bouchard with light casualties and a long record of successes.

The squadron did not confine its operations exclusively to land and sea but also had a troop function in an attached rôle with an airborne division in the initial assault. As a result of several successful combat missions many prisoners were taken, and many casualties were inflicted. One platoon distinguished itself particularly when it surprised an enemy column on the march. Firing all vehicular and individual weapons, the platoon ran down the column and killed several hundred of the enemy, while its own casualties amounted to only one man wounded. The remainder of the time that the troop's attachment was effective, however, its activity was confined exclusively to reconnaissance.

"Z" Cavalry Reconnaissance Squadron (MECZ) July 7-10

ON the evening of 7 July the "Z" Cavalry Reconnaissance Squadron (Mecz) crossed the Vire et Taute after the engineers had put in a bridge, and the squadron, followed by group headquarters closed along the trail just south of the bridge and leading to the vicinity of Goucherie.

The mission of the cavalry group was as follows:

Relieve an infantry division in its zone on corps order, occupy and defend the zone, and on corps order cross the Vire River and/or Vire et Taute Canal; move to the right flank of the infantry division; destroy and capture the enemy in the vicinity of Graignes to the canal; maintain contact with the division, and establish and maintain contact with the corps. This mission in effect placed the group between the left flank of the corps and the right flank of the infantry division.

The squadron in the lead was supposed to move rapidly over the trail in the vicinity of Goucherie. This road, however, was in terrible condition. In some places mud was four feet deep. The squadron moved out in order of march with an advance guard of one light tank and assault gun, followed by a reconnaissance platoon. Because of terrain conditions, the entire unit was forced to move in a solid column; it was possible to leave the road only by demolition on hedgerows or by using openings through the hedgerows to get into adjacent fields.

The column had moved but a short distance when it ran up against an enemy platoon with light automatic weapons entrenched, but was dislodged by use of assault gun, 37mm canister, which was very effective.

Light tanks left the road through hedgerows (after demolition had been executed on the hedgerows) and

A Reconnaissance unit passes through Theux, Belgium. Belgian flags are hung in welcome.

moved in on the flank of the enemy position. Reconnaissance platoons attacked dismounted along the hedgerows covered by the fire of the mechanized vehicles.

Several similar actions took place during the march to the vicinity of Goucherie. The squadron closed late in the night of the 7th in the "er" in the word Goucherie. A 75mm enemy gun was discovered in this vicinity and was knocked out by firing canister from tanks which were later supported by assault guns. Available information regarding the enemy at that time was that the line Sur-le-Mont-Graignes was occupied by poor class Todt troops, with most of the SS 38 Panzer Grenadier Regiment in the le-Mesnil-Angot area.

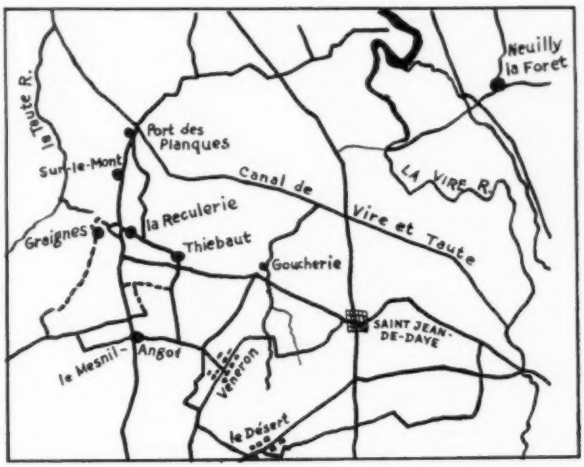
At 0700 on July 8 the squadron moved to the attack on Goucherie. Attack was made dismounted by the reconnaissance troops with Troop A, with a squadron of engineers attached, and reinforced with tanks and assault guns forming a base of fire. Troop C moved in on the south flank of the town with machine guns, mortars and using 510 radios. Troop B was held in reserve. On the south flank Troop C encountered determined and strong resistance, but eventually drove the enemy out and entered the town shortly after Troop A. Eight prisoners were captured, 5 enemy killed and two enemy machine guns, rifles, pistols and other equipment were captured. During this attack corps artillery furnished supporting fire.

Upon entering the town Troop A consolidated its position, while Troop B then mounted up in its vehicles and moved around through St. Jean De-Daye to Goucherie and pushed on west to just east of Thiedaut. Although its advance was opposed by a company of the 38th SS Panzer Regiment, Troop B killed 70 Germans, wounded 55; they suffered in turn one seriously injured and one wounded.

In the afternoon Troop A received a heavy counterattack by dismounted enemy supported by 75mm antitank guns and flame throwers. Forced to fall back, the troop experienced much difficulty in moving their vehicles to the rear and were closely followed by the enemy. Troop B was pulled in to help on the right flank. After Troop A had taken a position just south of Goucherie the attack was stopped and the enemy withdrew.

Meanwhile Troop C had been brought into town to await orders. About dark the group elected to take position along a creek running north and south through Goucherie to carry out the mission of protecting the flank of an infantry division. Troop C, left in town with the engineer platoon, was bothered greatly during the night by the action of enemy snipers, who were extremely difficult to locate and get out of the way during darkness.

Early in the morning of July 9 the group was attached to CC "B" of an armored division with a mission to hold the line just west of the north and south road through Goucherie, with reconnaissance to a line a mile and a half to the west to cover the crossing of elements of the



9th Division. This mission was performed successfully. Only small dismounted enemy groups were encountered and driven out by the action of the small dismounted units supported by tanks and assault guns.

Late in the evening the group was attached to the 9th Division. At 1630 orders were received for the group to move to the north and south line through le-Mensil-Angot and then move north to seize the bridge at Port des Planques. The attack, to be launched at 1800, was to be supported by a medium tank company from the armored division. Troop B, reinforced by one light tank platoon, one medium tank platoon and one squad of engineers was to move along the road, while Troop A, with the same reinforcements as Troop B was to move north of the road.

Troop B's move on the road west from Goucherie was stopped by two well organized enemy companies. Troop A was able to push on to la Reculerie. Late in the evening the enemy blew up an antitank gun; sniper activity completely ceased; and some movement was observed in the enemy rear. It appeared that the Boche was going to withdraw.

The morning of July 10 the squadron again moved out optimistically. Troop A sent a strong patrol, reinforced with a tank section and assault gun section to the north, while another patrol, similarly organized reached a point just north of Graignes, where it ran into friendly artillery and was forced to retire.

At about this time the enemy launched a counterattack from the southwest, followed later by an attack from the west supported by 4 or 5 antitank guns. The enemy attacked with two companies of infantry with many automatic weapons and mortars. Part of Troop B became isolated at the town of Thiebaut, which forced Troop A to take up a position just north of Thiebaut. During the intense fire fight, which lasted for 30 minutes at extremely close range, Troop B fought and held. The situation was looking bad when an infantry regiment arrived and attacked with two battalions. The advance was then pushed forward to the original western objective.

Comments

Signal Corps Photo

Vehicles of an infantry division move through the ruins of St. Lo, France, July 29, 1944.

"Normandy, Brest and the Present"

From "Q" Cavalry Reconnaissance Troop (Mecz)

Captain Edward G. Jones, Jr., Troop Commander:

LEADERSHIP is really the key to it all. As a leader you must make sure that orders are carried out to the letter.

Special attention to details is very important. When a unit goes into operations, it should not let down on these things; if anything, it should place more emphasis on them. During operations, troops are not always active; there are periods when nothing is going on. Unless things such as appearance, wearing of equipment, care of equipment and vehicles are stressed, there is a tendency to relax and not uphold the standards previously taught.

Training in tactics, employment of weapons, and the policy of having everyone in the organization know the other man's job are not only sound in principle, but absolutely essential in battle. Enemy fire is no respecter of persons. If a radio operator is hit someone must take over immediately. The same applies to drivers, gunners, or leaders.

While training is very important, if men do not practice conservation of matériel and equipment—in fact, supply discipline—then the training is no good. It would take a QM regiment to haul replacement stocks to one careless troop. It has often been said that there is no accountability in combat but any loss or damage to equipment because of carelessness will mean someone's life. That is the only accountability. It is the duty of all leaders, down to and including the squad leader, to make this point clear. If equipment is damaged, salvage it; if equipment is found, turn it in or put it where it will be found by the follow-up troops.

Inasmuch as communication is the spine of a reconnaissance troop, all personnel should have a reasonable working knowledge of the organizational radio sets. This troop was so trained prior to entering operations and it was found that such training paid dividends in battle.

The German is still making the best possible use of terrain, camouflage and observation. Furthermore, he is now fighting in his own "backyard." He knows the ground, and too, he is fighting for his own home. The tendency, therefore, is for him to fight harder than ever.

...ts from Combat

1st Lieutenant Henry Strickland, Communication Officer:

In general, communications in this troop have been good, and very little time has been lost on repeats.

The question of a quick flexible code for reconnaissance elements has been quite a problem. By using a separate base plate from that used by division the slidex method proved very successful. The M-209 was found to be entirely too slow and caused delay in traffic.

Whenever two or more radio units are mounted in the same vehicle, a minimum component parts list should be specified. It was found that the combination of two large radio sets in an M-8 constituted excessive equipment and required a necessary reduction.

Rainy weather in France caused a break in communications; transmission was out about one-fifth normal distance.

In training of radio operators, more stress should be placed on practical common-sense repairs, which could be performed by the operator himself. Too many times an operator knows how to pound brass and give the correct procedure but is completely lost on simple repairs to his equipment. This applies especially to reconnaissance and tank units out in front of division.

1st Lieutenant William S. Murdoch, Platoon Leader:

All cavalry replacements should have training in the removal of mines.

With almost no exceptions, it has been found that the enemy is very free in his use of Teller mines. Whenever he withdraws he leaves most roads and trails mined. These mine fields are of various patterns, and about one-fourth of the mines laid are booby trapped. Most mine fields are easily spotted because of the enemy's haste in laying them. The fastest and safest way to remove mines is to pull them with long ropes.

Several M-8 armored cars have run over Teller mines, but with the protection of the armor plate on the floor very few casualties have resulted; whereas, if this protection had not been added it is felt that hitting mines would have caused a great many more casualties.

1st Lieutenant Clarence Gebhardt, Platoon Leader:

Inasmuch as a reconnaissance platoon operates quite often by sections, usually in front of or in between all other troops, every man must know and carry out his job to a "T."

In Normandy we bitched about the hedgerows, but from experience in the open country since then, it is generally agreed that the hedgerows had their advantages for us as well as for the enemy. The M-8 armored car is not an off-the-road vehicle, and in open terrain it is sometimes very important to travel cross-country.

Of the three campaigns—Normandy, Brest, and the present—the terrain around Brest was by far the best suited to reconnaissance vehicles. The hedgerows in the Brest area were thinner and more widely separated than in Normandy. The roads had fair cover, and the hills in most places were easily crossed or by-passed without exposure to enemy fire.

It sometimes pays when in actual contact with the enemy, even on a reconnaissance patrol in vehicles, to use every weapon available as soon as exposed or fired on. At the same time, it should be borne in mind that the 37mm gun is not to be used against heavy pillboxes or tanks—especially Tigers! It is like hail on a tin roof. Its most effective use is against a machine-gun nest or personnel in groups. On the other hand, the .50 caliber is very effective against personnel and light vehicles. It should be used on the lead jeeps as well as on the armored car.

Hermann, the German GI, fights to his last chance, and then comes out with a big smile on his face, looking for sympathy and cigarettes. This was noticed especially during the Brest Campaign.

S/Sergeant Edward H. Duane:

Upon arrival in France, the supply stock was very low, with only necessary and organizational equipment. By starting immediately upon strict supply discipline and requisitioning items as needed, the amount of equipment drawn by this unit has been comparatively small.

Upon landing, the equipment was distributed in three half-tracks and trailers. At the first opportunity, these vehicles were reassigned and a half-track and trailer designated for signal supply and repair, one for ammunition and small-arms repair, and one for supply. This arrangement left two half-tracks practically empty. These have been used to transport food and equipment to the platoons in the field and to draw supply and food from the supply points.

With a good crew, such as this supply section has, by coöperating and pitching in to accomplish whatever necessary, most obstacles can be overcome very early.

It is believed that by substituting the three half-tracks for one 2½-ton 6 x 6 and two weapons carriers the section could overcome its transportation problem. By using the 2½-ton 6 x 6 for a supply room and small-arms repair shop, and the trailer for all equipment not in frequent demand, a more efficient supply room could be established.

Because a half-track uses a considerable amount of gas, makes a lot of noise, and gets around slower than a weapons carrier, it is believed that the weapons carrier could be used to transport food and equipment back and forth from supply points and to the field more easily and quickly. Thus the two trailers attached could be used as a signal supply and a maintenance shop.

S/Sergeant Clarence L. Robertson, Platoon Sergeant:

Versatility, Joe! The more you know about the other guy's job in this war, the more chance you have to get through. Of course, this is said with reservations, but take it or leave it, a slight working knowledge of all units and their weapons is a must. This reconnaissance troop was trained with this idea, and it has been useful, because at various times the troop has fought as infantry, artillery, reconnaissance or what-have-you, and it has been able to step in at any time at any job. Versatility creates an element of surprise for Hermann, who has you tabbed as a specialist. So ask plenty of questions, and be curious as hell about the other Joe's job.

France—Rear Echelon Personnel

Private John A. Maitland:

FOLLOWING hot on the heels of an American army in France, this ordnance ammunition company has on several occasions been very close to the German lines. Most of the following comment is "old stuff" but cannot be stressed too often.

Information. Whenever possible, all personnel should be given a true picture of things happening. Failure to do this is a main trouble. We just do our duty—not knowing, when, where, or why. This can be altered by following the Five Paragraph Field Order.

Orders. Make all orders as direct as possible. Don't let men obtain any information by the "grapevine" method. This pertains to any movements. N.C.O.'s should inform their men correctly and not keep things to themselves until the last minute. Men are not mind readers.

Equipment. Be certain that all equipment is in good condition and have the right things for the right job. Don't over-burden yourself by carrying anything extra.

Mines and Booby Traps. "Curiosity killed the cat." Don't worry about what is in the other field or on the roadside. You will know in time.

Rumors. "Just heard the latest. . . ." Watch out, that is dangerous. Men have died by failing to check up on stories. If you hear or pass on any information be certain that it is true and comes from good authority.

Bivouac Areas. Obey all things taught regarding rules, regulations, camouflage, layout and bivouac security.

Maps. If possible, study maps of the country you may visit. It will help greatly, for you may be out on detail alone, as often happens here.

You. Know yourself, your job, your vehicle and weapon well and always be a minute man. Remember the unpredictable always happens in war. Be ready for anything.

It has been our job to see that various units get their ammunition correctly and as fast as possible. We shall soon be in Germany.

South Pacific—Quick on the Trigger

1st Lieutenant William W. Chiprin, Tank Bn.:

IN many, many instances the *physical* condition of a soldier will spell the difference between life and death. Upon that premise thousands of soldiers will stake their lives, just as thousands will learn in the hard school of warfare—and many will die because of being a "bit soft."

In one phase of the Kwajalein Campaign I witnessed a scene which will long live in my memory. One early morning during February, 1944, I was leading my platoon of tanks to the front when we were stopped by an infantryman who needed some help on a pillbox. Just as I stuck my head out of the turret to hear what he had to say, a Jap, who had been very well concealed, arose on all fours and flew through the air in a manner that reminded me of a Marathon runner. As he dashed toward the infantryman, whose back was to the Jap and, incidentally, only 10 to 15 yards distant, my mind froze for a second. Simultaneously, the Jap raised a two-armed saber.

Desperately I pointed and yelled, "Behind you, behind you!!"

Finally catching the meaning, the sod pusher turned swiftly and, firing his M1 rifle from the hip, in the same instant jumped to one side. When he fired, the saber was just beginning its downward arc toward his head or shoulder. As the Jap fell, his saber slashed through space and the infantryman fired another shot, then finished the Jap with a few bayonet thrusts.

If the infantryman had not been in good physical condition, he would not have turned fast enough, nor pulled the trigger in the right split second, and in a case such as that there is only a split second between life and death.

Good physical condition quickens thought and reaction; poor physical condition slows them. In the above instance, although the soldier did not comprehend my signal in the first split second, when he did understand, his reaction was instant.

In addition to physical alertness, the above incident also illustrates another point of value. Tank commanders, armed with pistols in addition to or instead of tommy guns, would often find such side arms of inestimable value.

Tommy guns are too clumsy to be utilized from a tank. The tank is merely a storage place for the guns until the tank crew actually dismounts. If a situation requires that an individual weapon be used from a tank, what could be faster than for a man literally to snap out a pistol and fire instantaneously? Naturally,

he would have to be adept in the use of the weapon and thoroughly trained.

Another incident which occurred illustrates this point even more emphatically than the above experience. One tank commander had opened his turret to dispose of his brass, when he found himself face to face with a Jap who had jumped up on the rear deck and was about to throw a hand grenade at him. The tank commander whipped out his pistol, which he had acquired by a "midnight requisition," and shot the Jap.

One trick that the Japs tried to put over—and almost succeeded—was tried on my tank on two different occasions. Two Japs, waving a white flag, would come out of a foxhole and approach the tank. Just as they were about to be accepted as prisoners, the first one would suddenly go down on his hands and knees, while the Jap in rear would pull the trigger of a machine gun strapped on the first Jap's back. Fortunately, the first time my shots were truer than the Japs; the second time, the trick was stopped earlier.

Modern cavalry—in tanks—need to be as "quick on the trigger" as rough riders ever were.

* * *

Burma—"The Jungle Isn't Half Bad"

Lt. Colonel D. E. Still

IN 6 months of operations with "Merrill's Marauders" in Burma I have seen two snakes (garden variety), one scorpion, and that is all. Without even trying, anyone could do as well in one afternoon along the Texas Border. At certain seasons of the year the jungle is a bit warm, but it is certainly not any hotter than Fort Clark in the summer, or for that matter, Fort Riley in August. There are, however, quite an assortment of trees, bushes, and vines. In fact, for the most part, on careful inspection, one finds that the Burma jungle is composed of that and little else. To this there is one important exception; there are trails, villages, and clearings.

These latter terrain features are all important. No one (not even the natives) does much fighting, carousing, or loitering in the jungles proper; that is, not for any extended period of time. Everyone travels on the trails, makes his living off the clearings, and lives in or near the villages. Likewise, most all of the fighting is on or near roads, trails, and villages. Of course, during the excitement of battle, and for tactical reasons too, a certain amount of fighting occurs in jungle terrain adjacent to trails and villages—but it is very adjacent.

Most writers on the jungle seem to fill up space with the unusual and rare features of jungle terrain and jungle fighting but fail to mention the commonplace and day-by-day usual items.

As far as fighting is concerned, the Burma jungle imposes limitations on the usable range of weapons, increases the relative importance of short range automatic weapons, and increases the difficulties of observation for artillery and mortars. Maneuver is restricted of course.

Signal Corps Photo

Supreme Allied Commander of Southeast Asia, Admiral Lord Louis Mountbatten, visits the forward Burma area 25 June 1944. Note thick jungle growth bordering trail.

Usually, troops move more slowly and for shorter distances. Obviously negative air information must be closely checked.

He who controls the trails, towns, and water courses controls all the rest of the local scenery. If the Japs prefer to forsake these and go in the jungle, don't become impatient. They will get disgusted and hungry enough to come out. If they stay in the Burma jungle long enough, and in sizeable numbers, the Emperor will probably be forced to form another new cabinet.

As for living off the Burma jungle, forget it. Stick to K or C rations, however monotonous. If bad becomes worse, bum some chow off the natives. If lost, and unable to find your way around blame yourself for not learning basic scouting and patrolling, which is as applicable in Burma as in Kansas or Texas. Then, after this period of self recrimination, swallow your pride and ask directions of a native as you would of a San Antonio traffic cop or a local farmer in Louisiana.

Seriously, all that one has to do to survive the jungles of Burma is to be sensible, adhere to basic principles, and snuggle up close to your own artillery and air support. If you do this, you will find that the jungle isn't half bad.

What have you learned in combat?
Write it down—100 to 2,000 words.
Tell your own story; tell it your own way.
Write about what to do—what not to do—to save lives, time, weapons—how to outwit and outfight the enemy.
Write what your unit did in battle—what the enemy did—and what lessons were learned.
Send your story through your Public Relations Officer for "field clearance." Mark it for THE CAVALRY JOURNAL, 1719 K Street, N.W., Washington 6, D. C.
Let others benefit from your experience.

THE "BUFFALO" PLAN

by Rich

1st Armored Division on Ro

"BEFORE I will report to the Fuehrer that this division is unbattleworthy, I will pack the remnants into one truck and take them home." So said Lt. General Heinz Greiner in March as he brought his newly organized 362d Infantry Division into the German line opposing the Anzio beachhead.

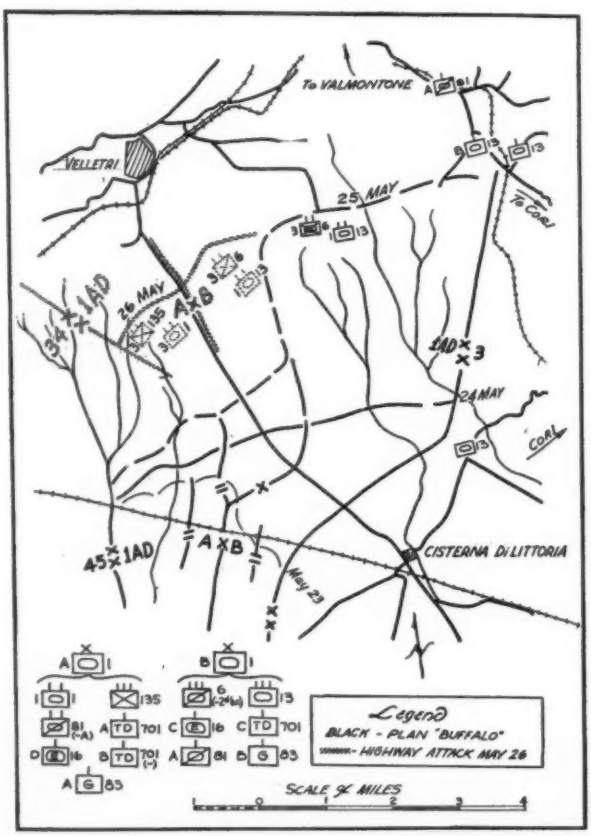
On May 23, in an attack called "Buffalo," the 1st Armored Division made the first part of the general's threat come true. It can safely be assumed that the general saved one truck from the three-day battle that wrecked his division.

To wipe out a division, penetrate a line of fortifications which the Germans had spent 4 months preparing and so disorganize a German army that it was forced to begin a 200-mile retreat the attack required careful planning, unquestioned teamwork and an element of surprise.

The over-all planning of the Fifth Army attack from the Anzio beachhead consumed two months, but the finer stages of the preparations were not reached until the final month. For those 4 weeks, the commanders and staff, and unit leaders down to squads and tank commanders, pored over two attack plans—one aimed at Cori in the northeast, the other at Littoria, to the east.

The plans were "Buffalo" and "Grasshopper." Plan "Turtle," the only other of the many considered to survive to the semifinals, was discarded at the last moment because of reportedly heavy German defenses on the road to Albano.

For both the "Buffalo" and "Grasshopper" plans, artillery positions were dug and stocked with ammunition; final assembly areas were selected and reconnoitered; complete air reconnaissance was made of both sectors; and personal reconnaissance was undertaken by unit commanders. German troop dispositions and strengths were discovered and studied. Every possible obstacle that the enemy might throw in the path of either attack was considered and measures taken to combat it.



Sweating and Swearing

The teamwork was achieved by the 1st Armored Division through weeks of attack problems rehearsed down to the smallest detail. The training area was so close to the front lines it could be observed with a three-power binocular and shelled with an 81mm mortar.

The teamwork was not achieved by last minute exhortations by commanders to coöperate, but resulted rather from much sweating and swearing through the same attack problems time after time until every man knew his job. In the problems particular stress was placed on communication between platoon leaders and company commanders of tank and infantry units. The individual infantry squad leader was taught not to wait for radio communication if it were not immediately available, but to approach on foot the nearest supporting tank and in person request fire on the strong point or machine gun nest holding up his advance. The foot soldiers were the "eyes" of the tanks.

Numerous times in the actual attack on May 23, infantrymen sought out their supporting tanks and from a perch behind the turret directed them into the firefight.

Artillery preparations for the attack were plotted for virtually every inch of ground in the division sector. Through a series of phase lines, artillery could be concentrated in a single band completely across the division front.

by 1st Lieutenant
Richard K. Gottschall

n Road to Rome

Signal Corps Photo

A 1st Armored Division light tank crosses a road block, blasted-in ten minutes before by the Germans in a vain effort to delay troops from reaching Rome.

Signal Corps Photo

From Anzio through Rome to Viterbo, armor led the way in a well-planned attack over good tank country. Left, reconnaissance cars of the 1st Armored Division, move past an American tank, knocked out during the drive on Rome.

By plotting the numerous houses that dotted the Cisterna plain, and assigning to each a number, it was possible for every soldier in the division attack to call for, and get, artillery support where it was most ne Probably more than in any other attack of the div artillery fire was called for not by battalion and b commanders, but by platoon and squad leaders, whom knew the numbers of the houses direct their front.

As a further aid to planning, the division's ar engineer battalion constructed a 30-foot square t board covering the sector of the intended attack. board was studied by all officers and noncommiss officers of the attacking troops.

Surprising an enemy who had been expecting tack for weeks was difficult to do, and especia when every assembly area was under observation. camouflage discipline and last-minute groupi forces were the only ways that offered any hope ception.

Since the direction of the attack was not fina cided until May 21, there seemed little likelihoc the Germans would be able to get positive infor of the plan long enough before H-hour to do much good. To confuse German intelligence, ho during the week preceding the attack officers an wearing 1st Armored Division patches were s patrols with an infantry division in the sector northwest, along the "Diagonal" road. British a enlisted to simulate increased troop movement on the opposite flank of the beachhead. Some British artillery was moved into position in that sector and dummy

Command "B", which had been assigned the right half of the 1st Armored sector. By dark, when CC "B" had reached the railroad, CC "A" had pushed up to 1,000 yards beyond.

The difference in speed between the two combat commands was due partly to heavier enemy resistance on the right, but mainly to the use of 6 demolition "snakes" employed on the left to blast paths in the heavy mine fields rimming the German defenses. These "snakes", used for the first time in combat, not only cleared gaps wide enough for tanks but killed or stunned enough enemy troops in forward strongpoints to permit the assault infantry to mop up with little opposition.

The "snakes", as constructed by the division engineer battalion, were 400-foot flexible steel lengths packed with more than two tons of TNT. Towed as close as possible to the mine field by a medium tank, each "snake" was pushed into its final position and detonated by machine-gun fire from the tank.

Only one light tank, which accidentally strayed from the safe path, was lost through antitank mines the first day in the CC "A" sector. Because of tank losses through mines in the CC "B" sector, it became necessary to attach a platoon of tank destroyers as replacements.

The CC "B" losses should not be considered as high, despite the necessity for replacement of vehicles. In the case of both combat commands, the surprise achieved by the attack was complete, and constituted a real advantage over the enemy from which he never really recovered.

The attack was continued the following morning, and by 1100 hours tanks from both combat commands had cut Highway 7 north of Cisterna. Both forces reached their objectives and secured them before dark.

The day's attack cut off Cisterna, caused the evacuation of Cori and destroyed a large amount of enemy matériel. Prisoners of war for the day totaled 850, a figure nearly equivalent to the fighting strength of one of General Greiner's infantry regiments.

Dead End Street

On May 25, enemy resistance and unsuitable tank terrain slowed the CC "A" advance on the left, while weakened resistance and adaptable terrain speeded the attack of CC "B". The Cori-Velletri road was cut at 1300 hours, and CC "B" was ordered to halt and secure its position.

The day's operations indicated that the enemy had suffered so many casualties he was forced to withdraw on the division's right, while stiffening resistance on the left indicated the enemy had regrouped the remnants of his forces to make a determined stand in the Albano hill mass.

After detaching a medium tank battalion and an infantry battalion for operation with the 3d Infantry Division toward Artena, the 1st Armored Division was grouped in assembly areas near Cisterna. At 1100 hours on May 26 the attack astride Highway 7 jumped off over unsuitable tank country against a strong enemy position. Mine fields and enemy guns stopped the attack cold, and by dark the forward troops were still 2,000 yards short of Velletri.

Relieved by an infantry unit, the division dropped back to assembly areas for two days of maintenance. On may 29, the attack was resumed still farther to the left, and the day's operations were both costly and fruitless. Owing primarily to poor coördination between the 1st Armored Division and the infantry division on its left, 37 tanks were lost. The enemy was permitted to infiltrate tanks and infantry behind our own assault tanks and attack the friendly infantry from the flanks and rear.

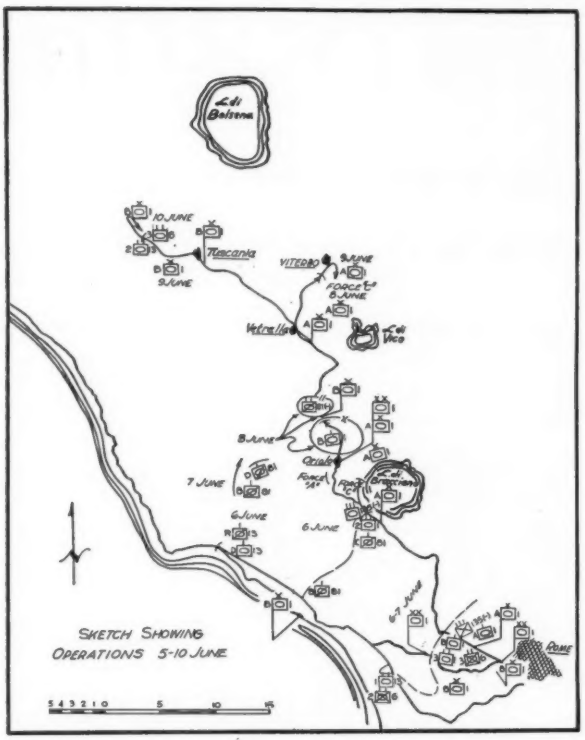
During the following two days the attacks were continued with better coördination but little more success. Tank and personnel losses had been high, little damage had been inflicted on the enemy—in proportion to that done in the first days of the break-through—and the 1st Armored Division was withdrawn from the line.

The Capture of Rome

On June 3 at 1330 hours both combat commands launched another attack along the Anzio-Albano axis. The battering that the German forces had taken in the past several days had so reduced their combat strength that they were forced to withdraw, and opposition to the attack consisted mainly of mines, demolitions and scattered strong points.

Several thousand yards of ground were gained during the afternoon, and orders were issued to push the attack through the night to secure Rome.

A flying column of a company of light tanks and a



platoon of tank destroyers was sent ahead toward Rome at 1330 hours. An hour and a half later three task columns of CC "B" were dispatched to secure crossings of the Tiber River immediately south of Rome. The first elements reached the city limits of Rome at 1615 hours.

Combat Command "A", which had been ordered to secure the Rome bridges across the Tiber, was delayed in accomplishing its mission until 2400, mainly because of the throngs of enthusiastic Romans filling the streets, and unfamiliarity with routes through the city.

In the pursuit north of Rome to Canino and Viterbo, launched the following morning, considerable difficulty was encountered just across the Tiber because of the extensive demolitions. At one point, contact was made with an enemy strong point by an infantry division's artillery, which crossed (in march column) in front of the reconnaissance elements of CC "B." Considerable confusion resulted in the CC "A" sector when a second infantry division discovered that it had taken the wrong route and was forced to countermarch on the road which CC "A" was employing for a main axis.

In the earlier full-scale attack through the German defenses around Anzio and the subsequent attacks on Velletri and Albano, the medium tanks followed by tank destroyer units, had been sent well ahead of the main body of the combat command to provide the maximum shock action. Then the infantry following in mopping-up operations, had been closely supported by the division's light tanks which had reduced any strong points passed by the initial waves of armor.

For the the pursuit, conducted on two parallel routes north of Rome, a considerably different formation was used. Small task forces were organized. These consisted of a company of medium tanks, a company of infantry, and a platoon each of engineers, light tanks and tank destroyers. Since most of the strongpoints and road blocks encountered had to be attacked frontally, the infantry was carried on the medium tanks so that the full strength of the force could be developed in a minimum of time. To speed the operation further, a second "pursuit task force" of the same strength passed through a road formation as soon as the first force had reduced the strong point or road block.

The Box Score

In the breakthrough and pursuit of the German forces 120 miles north to Canino and Viterbo, 2,805 prisoners of war were taken by troops of the 1st Armored Division. Destroyed or captured were 77 tanks, 115 trucks, 50 self-propelled and antitank guns, 17 artillery pieces and 6 armored cars.

In contrast to this, personnel losses within the division were light in proportion to the gains made. Equipment losses, although occasionally as high as 25 to 50 per cent of tank strength, were counterbalanced by the exceptional work of the division's ordnance battalion. On H Hour, tank strength was invariably above 90 per cent.

Although the largest single loss to the division's prisoner of war cages was the German commander, General Greiner, virtually every German unit—in rear as well as forward echelons—lost some men. The roster, made up at the end of the campaign, included nearly every unit that the Germans had had in that sector of the Italian front. Captured were numerous artillerymen, clerks pressed into front-line service by the heavy battle casualties, antiaircraft artillerymen, and even some representatives from hospitals and a quartermaster baking company.

General Greiner's division furnished 1,312 officers and men to the prisoner of war cages. Of these, 634 were from that division's 956th Infantry Regiment. Captured almost intact was one of the general's infantry battalions.

If War Department experience tables are taken as a key to enemy losses, the casualties inflicted by the 1st Armored Division alone on the 362d total approximately 6,500 men and officers killed, wounded or captured. From a D day strength of approximately 10,000 General Greiner had few combat troops left on June 10.

EDITOR'S NOTE: *The January-February* CAVALRY JOURNAL *will carry a third article by Lieutenant Gottschall on the employment of tanks in Italy. In it the author will discuss the day-by-day armored attack from Grosetto to Volterra—probably the worst tank country in Italy.*

Miracle of the Normandy

The story of the artificial harbor land and towed across the English

NO more extraordinary and dramatic tale of naval construction and operation has ever been told than the story of the two artificial harbors, built in Britain and towed across the English Channel in sections to Normandy.

Detailed dimensions of the harbors are not given, but it is stated that each was designed to be "roughly the same size as Dover." Also speaking roughly, Dover harbor covers some 760 acres—a very useful sized port indeed.

The Germans had always thought that the capture of a port was necessary before a properly equipped army could be deployed for action. In Normandy, 4 Allied armies were landed and equipped, and within 11 weeks the battle which decided the fate of France had been fought and won. This was accomplished, it appears, without help from matériel landed at any French port.

Many months before the invasion it was realized by the administrative planners that even if French ports in working order could be captured quickly, the stores required for the armies would far exceed the capacity of the ports. It was, therefore, planned to land, over the beaches, an estimated daily quantity of 12,000 tons and 2,500 vehicles of all sorts and sizes for a period of at least 90 days.

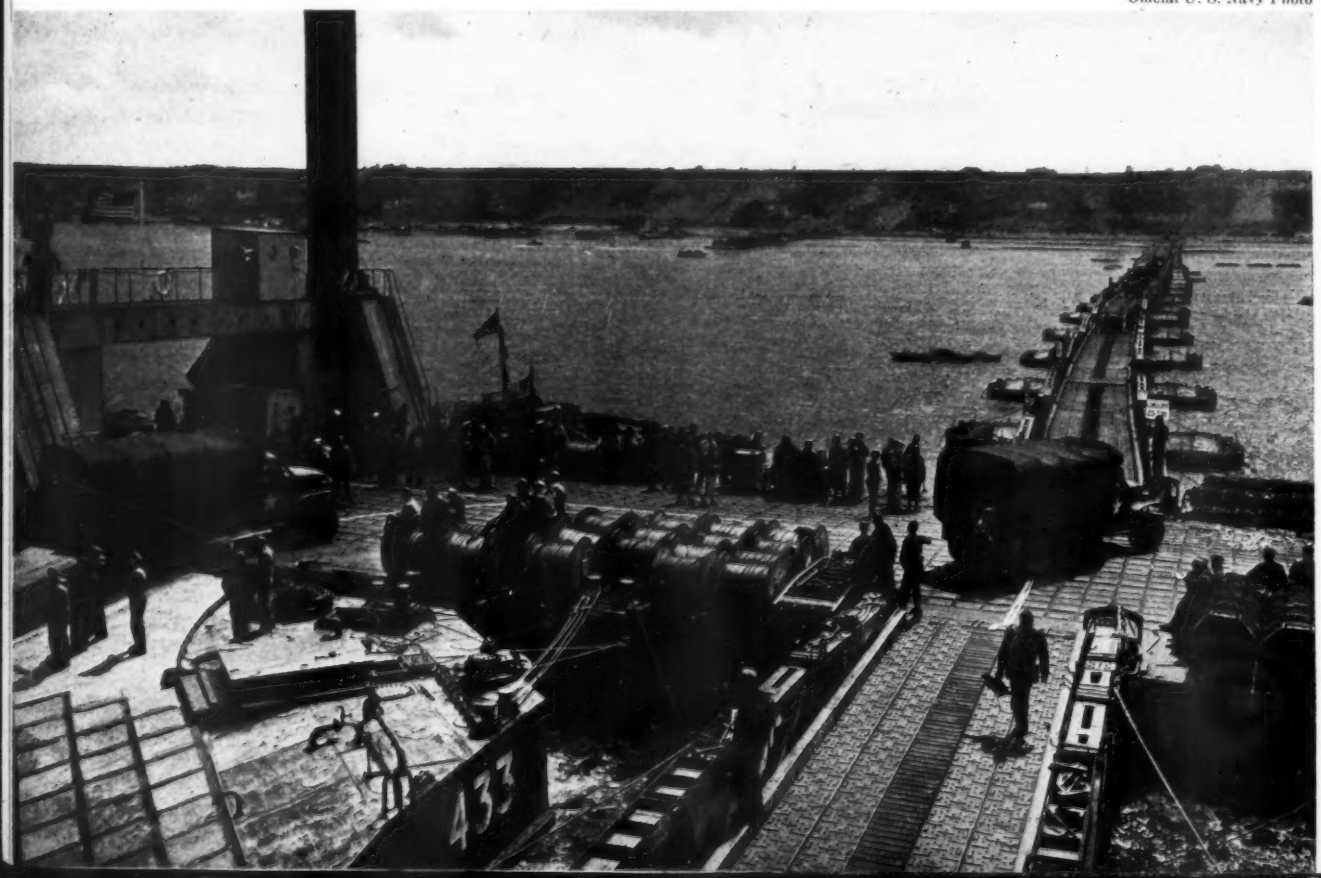
In the whole history of the world nothing like this has ever been done before, and to this fulfillment of what must have seemed a fantastic dream when the plan was first proposed must go a huge share of the credit for the brilliantly successful strategy of the European invasion.

British Labor

All the units composing these gigantic structures, including those required for the American part of the project, were built entirely in Britain by British labor. The construction of the concrete caissons alone necessitated the employment of 20,000 men; many thousands more were engaged on the other structures; and large

One of the most remarkable engineering feats of all time was the provision of two prefabricated harbors on the coast of Normandy without which the liberation of western Europe would not have been possible. These artificial ports, each the size of Dover, provided the invasion forces with the necessary stream of supplies and reinforcements. This unloading scene at the U.S. Mulberry occurred before the gale caused work on the United States harbor to be discontinued.

Official U. S. Navy Photo



dy Beaches

bors, prefabricated in Eng- lish Channel to Normandy.*

numbers of workers in the steel and cement industries were switched to supplying the vast quantities of matériel needed.

A tremendous strain was placed on workers in the building and civil engineering trades, whose ranks were already heavily cut by military needs. The only men left in those trades were engaged entirely in war work or essential maintenance. To meet the new demand, therefore, workers had to be withdrawn from airfields, factories, military depots, grain silos and other construction work of equal importance. Skilled men were temporarily released from the army and vital industries.

All this had to be accomplished according to an unalterable schedule to meet the D Day deadline.

The work had to be done in special sites near deep waterways and equipped with dry docks where these could be spared from urgent shipping demands. This meant transporting the workers sometimes hundreds of miles from their families, often at a few hours notice. It also meant finding temporary housing, transport and feeding facilities for them.

The men—whose ages ranged up to 72—had to face the difficulties of getting to their jobs, which were sometimes a considerable distance from roads, over waterlogged country. Most of the work was done in the winter, in wet and muddy sites. In the final stages of the job, the men had to work at great heights over water.

During the construction period, London, where most of the work was done, suffered a series of air raids. This meant that artificial lights, under which work was being carried on throughout the night, had to be extinguished—leaving the workers groping in the dark on the scaffolding under the light of enemy flares.

Despite all of these handicaps, the men worked willingly, long hours. How well they did their job has since been proved by the course of events in Europe.

The Task Up To D Day

The construction of the prefabricated ports was a race for time. The main undertakings were:

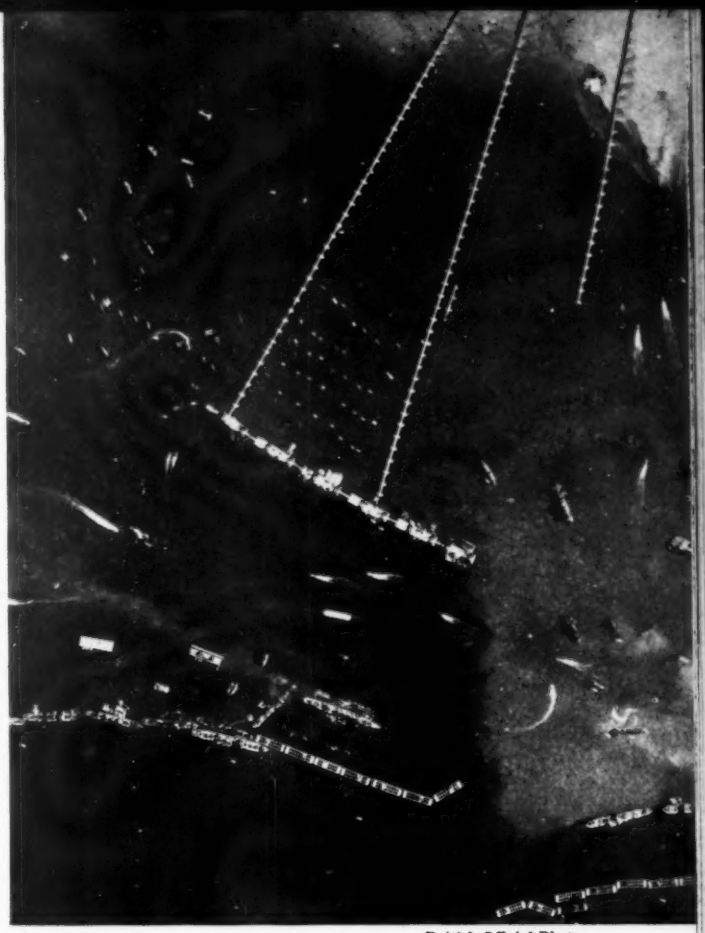
1. The construction of the concrete caissons under Ministry of Supply arrangements, more fully described in Appendix A.
2. The prefabrication of the pier equipment and its assembly into towing pieces, more fully described in Appendix B.
3. Construction of the floating breakwaters, more fully described in Appendix C.
4. Preparation of the blockships so they could be sunk easily and rapidly on an even keel.

These four in themselves were an enormous task in the time, without taking into consideration other tasks, such as:

1. Towing caissons, floating breakwaters and pier equipment from construction sites to assembly parks. In all, this amounted to 500 tows, some from ports as distant as Leith or Glasgow to the south coast.
2. Servicing and general preparation of the tug fleet for sea.
3. Forming and training the staffs and personnel of the Royal Navy, U. S. Navy, and Royal Engineers to carry out the operation.

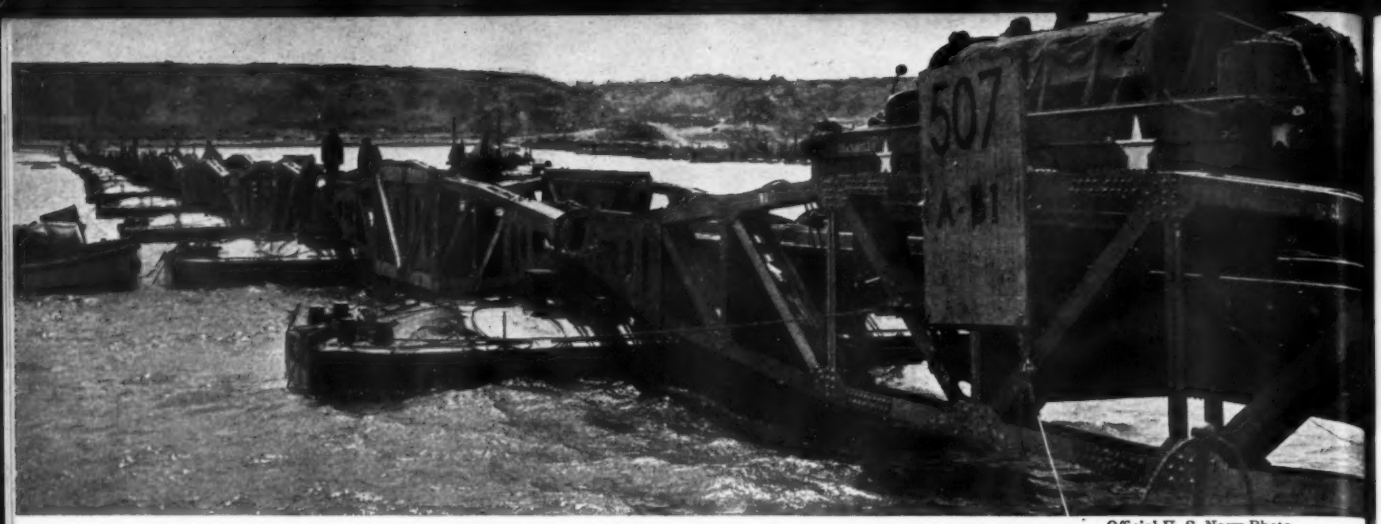
The time was, in fact, inadequate to complete this program, but the essential equipment with a suitable proportion of reserve was assembled and ready to go on

*From SHAEF releases, through British Information Service.



British Official Photo

This aerial view of a section of the British prefabricated harbor on the Normandy coast shows two steel roadways supported on special floats leading from the shore to a wharf formed by spud pierheads. In front of the wharf is the special breakwater of concrete caissons and blockships.



Official U. S. Navy Photo

Close-up shows side view of the prefabricated steel roadways, hundreds of feet long. It is built of a series of small steel bridges joined by special means to give flexibility and supported on floats that rise and fall with the 20-foot tide.

the right date, although the personnel had not been able to complete a full program of training.

For technical reasons, the concrete caissons could not be placed in water deeper than 5½ fathoms, which meant that only a limited number of ships, such as the Liberty type, could use the harbor. It had been decided, therefore, to make an outer floating breakwater.

In order to provide immediate shelter for the host of small craft, it was then decided to make five short breakwaters, formed of blockships, along the invasion coast. These could be provided quickly and would give immediate shelter. Two of them would be incorporated in the artificial ports. Sixty ships of varying sizes and types were earmarked by the Ministry of War Transport for this purpose. These, inluding some warships such as H.M.S. *Centurion*, the French battleship, *Courbet*, and the Netherlands cruiser, *Sumatra*, formed a total length of about 24,000 feet of breakwater.

The Operation

On D Day the first arrivals on the Normandy shore were the blockships, all of which, in spite of their age, made the crossing close behind the assault forces and arrived safely.

The ships were sunk by explosive charges, and their Naval and Merchant Navy crews were then returned to the United Kingdom. The whole of this part of the operation was completed successfully during the 5 days following D Day, and provided some very valuable shelter on the beaches during this critical period.

Meanwhile, the concrete caissons, floating breakwaters and piers were being towed across at an average speed of 4 knots, the total distance being over 100 miles. All the pieces towed very well in spite of their awkward shapes, except for the length of pier which had to be treated very tenderly in the choppy weather experienced.

The tug fleet available for towing the equipment totaled 85 vessels varying from very large U. S. tugs of over 1,500 H.P., to small tugs of 600 H.P., not generally used in the open sea. A minimum of 210 tows was required. Allowing for a few losses by enemy action, the tows were expected to pull a weight of over 1,000,000 tons, and each round trip was expected to take three days. Luckily there were very few losses of tugs, and they carried out this unusual, strenuous and sometimes dangerous task with great patience, courage and skill.

On arrival, the concrete caissons had to be sunk accurately in places selected as a result of surveys made by a special party landed on D Day. In spite of the difficulty of picking the exact spot, the operation was carried out very successfully and very few caissons were out of alignment. By D plus 12 more than half the caissons were in position, and the harbors were already an impressive sight.

Similarly, advanced parties in special ships arriving on D Day had laid heavy moorings in deep water, to which the floating breakwaters were attached as they arrived. This operation was completed by D plus 8.

Meanwhile, port parties of Royal Engineers (or of Seabees in the American harbors), landed on D Day, cleared mines, cut ramps in the esplanades and prepared roadways down to the beaches ready to receive the shore ends of the piers. The port party also included a naval beach commander and a detachment from the Royal Marines.

In the setting down of the harbor the navy and the army worked hand in hand; soldiers were sailors and sailors were soldiers and Royal Marines were both. This operation was half finished by D plus 12, by which time one pier, hundreds of yards long with several pierheads, was complete, and coasters could be unloaded at any state of the tide.

The Gale

Up to D plus 12 the operation developed according to plan. Very few accidents of the sea had occurred, and air superiority was such that enemy interference had caused little trouble.

But on D plus 13 a gale blew up from the northeast which continued for three days—the worst June gale experienced for 40 years. Moreover, it came from

the worst possible direction as the harbors were exposed to its full force. Unfortunately, it caught the harbors at the half-way stage. The American harbor suffered most severely, as it was in a more exposed site, and the breakwaters were largely broken up, so much so that this, combined with the capture of Cherbourg, caused work on this harbor to be discontinued. The British harbor, protected to some extent by the Calvados Reef, suffered far less damage, and it was soon recovered and completed.

The gale took a heavy toll of shipping and craft, but this was largely damage rather than dead loss, except in the case of the experimental floating breakwater, which broke up and ceased to give protection. The shelter provided by both harbors and the three additional blockship shelters, which stood up well in the gale, undoubtedly saved great loss of life and equipment. Unloading on the beaches elsewhere was quite impossible, but during this critical period a small but important trickle of stores could be landed in the harbor. Even on the worst day 800 tons of gasoline and ammunition, as well as many troops, were landed over the piers.

All the pier equipment which was on the voyage across when the gale started was sunk, but only one concrete caisson failed to weather the trip. After the gale subsided, the work of construction continued as before, though a long spell of rough water prevented pier equipment from being towed over, so that the harbor was not unloading to maximum capacity until well into July.

Finally the artificial harbor was complete, and a port bigger than many with famous names had been built in a few weeks against a lonely French beach. Day after day, in all weathers, scores of ships of all sizes have moored within its shelter or berthed in unbroken lines alongside its quays. As a result, hundreds of thousands of tons of vital supplies, scores of thousands of men and many thousands of vehicles have been put ashore in the most rapid military build-up ever undertaken.

The prefabricated port made possible the liberation of western Europe.

The wharf at the British prefabricated harbor on the Normandy coast consists of seven specially designed "spud pierheads"—steel pontoons with a displacement of approximately 1,000 tons. Each pierhead is a "ship," complete with crews' quarters, generating sets, storage accommodations, etc. Running out from the shore to these remarkable pierheads are two flexible floating pier roadways.

British Official Photo

Appendix "A"—Concrete Caissons

These caissons were made in 6 different sizes to suit various depths of water up to 5½ fathoms. The largest size had a displacement of 6,044 tons; the smallest, a displacement of 1,672 tons. When floating, the whole looked rather like a Noah's Ark without its roof; while, viewed from above, the cross walls made it look like an egg crate, as there was no deck.

Each caisson contained crews' quarters for use during the passage. The crews consisted partly of naval personnel for handling the ship and partly of the Royal Engineers (or Seabees) for carrying out the operation of sinking.

At a late stage, Bofors guns, 20 tons of ammunition, and rough shelters for a gun crew were placed on the top of most caissons as additional AA protection of the harbor.

Official U. S. Navy Photo

View of the damage wreaked by the terrific channel storm which broke on June 19, directly after the completion of the American Mulberry near Colleville, France. Boats and ships of all sizes were strewn about in a jumbled mass of inchoate wreckage. Much matériel was irrevocably lost.

Caissons were towed empty across the English Channel by one large tug (about 1,500 H.P.). On arrival they were maneuvered into position with the help of small tugs, and then the opening of special valves allowed water to fill the ship and sink it in place. Valves were left open so that the water level remained the same inside and out. It took roughly 22 minutes to sink the largest size caisson.

Official U. S. Navy Photo

Tugs jostle phoenixes into position before the seacocks are opened and the phoenixes sunk. In the background can be seen some of the vast flotilla of ships which thronged the channel off Omaha beach, waiting to unload matériel.

The number of caissons produced in various sizes were 60 (largest), 11, 25, 23, 17, and 10 (smallest), a total of 146. Construction was carried out in various ways:

	Number Constructed
In 8 dry docks	57
In 2 wet docks	18
In 12 basins	48
In 4 slipways	23
	146

The basins were holes excavated beside the Thames, in which the lower lager of the caisson could be built as in a dry-dock. A channel was then cut to the river and the caisson floated out to be completed in a wet dock berth. The required wet-dock berthing space amounted to 12,000 feet.

Construction sites were mainly in the Thames and Southampton areas, but outlying ones were as far distant at Birkenhead and Hartlepool.

The Ministry of Supply employed many of the leading firms of consulting engineers to assist in the project, and the actual work was carried out by 25 large contracting firms.

In all, it is estimated that the following main materials were used:

330,000 cubic yards of concrete, nearly 600,000 tons;
31,000 tons of steel
1,500,000 super yards of shuttering

Appendix "B"—Pier Equipment

The piers consisted of a single steel roadway, carried on steel girders similar in many respects to an ordinary bridge, but so designed that there was such flexibility that the heaving and twisting effect of the sea could be withstood. Each bridge span was supported on special floats, some of steel, and others of concrete, also designed to withstand the sea and also to sit down on rock or sand when the tide receded. Sections of pier were joined together by special means to give flexibility and to ensure easy and rapid connecting up.

There was no limit to the length of a pier, other than the depth of water for successful anchoring; for towing, lengths of 480 feet were joined together.

At the shore end these piers were joined to a very stout steel shallow-draught float which could be pulled right inshore at high water.

At the outer end, they were linked to specially designed spud pierheads, which consist of a steel ponton with a displacement of approximately 1,000 tons. Each pierhead is a "ship," complete with crews' quarters, generating sets, storage accommodations, etc. Coasters berth alongside and unload direct into trucks on the pierheads.

The same pierhead with some extra fittings can be converted for use of L.S.T.'s. A sort of false beach piece made of steel is provided, and onto this the L.S.T. runs its bows and lowers its ramp. Vehicles can be discharged very rapidly by this means.

Pierheads were built as ships in various ports on the coast, from Leith round to Glasgow; 4 were built by the Royal Engineers at military ports in Scotland. Most of the remaining equipment was prefabricated all over the country and then assembled at army depots at Southampton and Richborough. Some 240 contractors were employed on this task, so that it is impossible to estimate the labor force involve. In all, 50,000 tons of steel were used.

Appendix "C"—Floating Breakwater

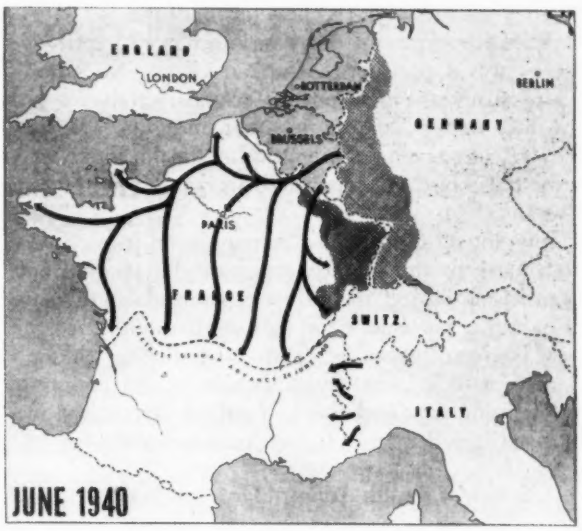
The floating breakwater consisted of steel floats, moored end to end in a long line and designed to have a damping effect on the sea in winds up to Force 5 which might be expected during the summer months.

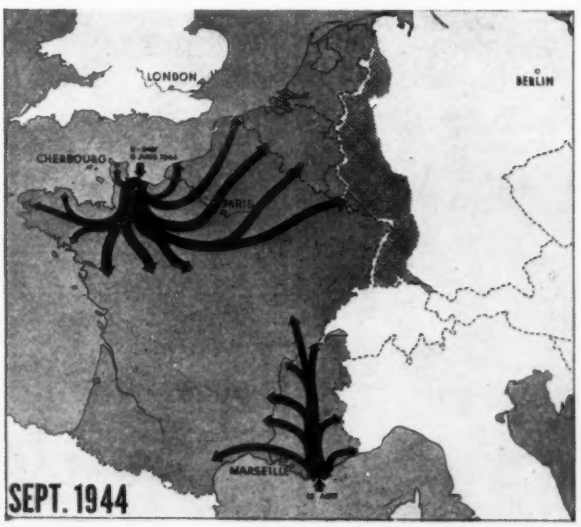
By March two rows had been completed and moored under constant observation off the south coast. From then until D Day, the weather was generally calm so that, although the breakwater gave great promise, no one could be certain how it would behave in really rough water.

Units were prefabricated, and then assembled at Southampton, where a labor force of 2,000 men was employed. It is difficult to estimate the number of men employed in other areas on prefabrication, but this is probably about 6,000. A total of 15,000 tons of steel was used in this construction.

Conquest and Liberation of France

France built her Maginot Line in the ten years before 1939 with the idea that she should never again be invaded by the Germans. Opposite it the Germans threw up the Westwall or Siegfried Line. In the months between September, 1939, and May, 1940, troops in both fortifications maneuvered but contacted each other only in patrols. Nazi troops hit France at the northwest border after overrunning Poland, Denmark, Norway, the Netherlands, and Belgium and struck where the Maginot Line ended and its weaker extension at the boundary of Belgium began. Fast motor columns drove for the Channel and split the Allied forces in two. A week after the Nazis reached the sea May 21 came the miraculous withdrawal from Dunkerque in which 325,000 Allied troops escaped the German trap. At this helpless moment France was attacked from the south by Italy on June 10. The Germans entered Paris four days later and while some units pressed southward others swung around behind the Maginot Line. By June 24 the fighting was over. The armistice split France into occupied and unoccupied areas, put more than half the French population under German rule, placed the cost of supporting the occupying forces on the French people and gave Germany the best industrial and agricultural areas. In November, 1942, when the Allies invaded North Africa the last pretext of a French government was swept away as the Germans moved into Southern France. The freeing of French soil was begun June 6 and the plan that was opened with the Channel crossing is still unfolding. The invasion of Normandy, the drive through Brittany, the landings on the south coast of France, the invasion of Germany are only continuations of what started long before.





BLITZ THROUGH FR

4th Armored Division Spearheads Th

IN 9 weeks of combat (from July 17 to September 20) the 4th Armored Division, commanded by Major General John S. Wood, spearheaded the armored advance of the U. S. Third Army from the hedgerows of Normandy into the German-annexed territory of Lorraine.

In those 9 weeks an 800-mile right hook was thrown from Normandy through Brittany across France, into Lorraine, and over the Reich's self-proclaimed frontiers. During the advance, tanks put up to 1,900 miles on their mileage meters, destroyed 400 enemy tanks (up to September 27), captured 15,000 counted prisoners, killed 5,000 Germans, and knocked out 1,500 miscellaneous vehicles and 140 large artillery pieces.

The 4th Armored Division (activated April 15, 1941) was a part of Lt. General George S. Patton's Third Army as organized in Great Britain before the invasion. After landing in Normandy the week of July 12, it was temporarily attached to the First Army until the Third was activated during the fighting in Brittany.

Jumping off from Raids, Normandy, on July 27 after an intense air and infantry attack on the enemy front, the division cut off the Brittany peninsula in 10 days of lightning movement and fighting that outblitzed the best German panzer achievements. Racing through Periers, it took Coutances and Sartilly and after savage fighting captured the key city of Avranches and plunged into Brittany. It then marched alone for 140 miles to contain Rennes and capture Vannes on the south coast of Brittany and seal off the peninsula.

The division, again a part of the Third Army, also took Nantes and contained Lorient in a move that trapped thousands of Nazi navy personnel.

When the armor penetrated Brittany, the supporting infantry were left far behind. Actually, the division became an armored island in the midst of thousands of Nazi troops. The enemy which escaped destruction were disorganized and bewildered by the penetration, during which marches of from 50 to 100 miles were made in less than a day.

Enemy units contacted and defeated included the 5th Paratroop Division, the 17th SS Goetz V Berlichingen Panzer Grenadier Division, the 2d SS Das Reich Panzer Division, the 116th Panzer Division and the 77th, the 243d, 265th, 266th, 353d, and 709th Infantry Divisions, and supporting and attached units.

After contact with the 4th Armored, the Nazi 77th, 91st, and 243d Infantry Divisions were considered destroyed, the 6th Paratroop Regiment was wiped out, and three regiments of the 5th Paratroop Division were severely beaten. The 56th Security Regiment, which fought in the Vannes area, and the 281st OST Cavalry Battalion were liquidated.

With its extended supply lines in Brittany, however, the 4th Armored Division was under constant threat, and it was necessary for tanks and armored cars to shepherd supplies.

A U. S. tank of the 4th Armored Division churns deep into the mud as it makes a crossing of a canal in France, Sept. 20.

RANCE

ls Third Army

After sealing the peninsula the division turned to the east. Making a 153-mile march in two nights and a day, Combat Command "A" moved on Orleans from Nantes on August 15. The city fell to the armored thrust after sharp fighting in which two German regiments of artillery and infantry were both virtually destroyed. As a result, Paris was outflanked from the south on a line along the Loire River.

Assembled in the vicinity of Orleans, the division then resumed its drive to the east on August 21. By the afternoon of the same day CC "A" sped to Sens and drove into the heart of the city. Catching the garrison by surprise, with officers on the streets in dress uniform, the tankers eliminated the enemy and captured enormous stores of fuel, food, and military equipment. Then quickly securing the city and moving across the Yonne River to secure the bridgehead, CC "A" met and destroyed an SS brigade on the outskirts of Villeneuve.

Meanwhile Combat Command "B," moving to the south, captured Courtenay and moved on Montargis from the east. A large enemy pocket of infantry and artillery was reduced north of Montargis and the evacuation of the city forced on August 23.

The division next secured a bridgehead across the Seine River at Troyes August 26 after fierce fighting in which one column of CC "A" routed an SS brigade. The attack was made in vehicles spread in open desert formation down a 3½-mile slope under heavy enemy fire. According to a prisoner of war, only 40 per cent of the 51st SS Brigade was left after the armored attack.

Three days later the division made three crossings of the Marne River and captured Vitry le Francois. Chalon-sur-Marne, St. Dizier, and Ligny fell rapidly. An assault led by a light tank company driving through a torrential rain at 40 miles an hour took Commercy, captured the bridge across the Meuse, and seized the high ground east of the river.

Halted by command of higher headquarters, the 4th Armored held the ground for consolidation by infantry which followed and prepared for an assault on the Nazi defenses of the Moselle River.

On September 11, supported by doughboys of the 35th Infantry Division, the tanks burst across the Moselle south and then north of Nancy. Routing Nazis who had been ordered to hold the Moselle line throughout the winter, the division's two armored columns swept into Lorraine to come together east of Nancy in a move instrumental in forcing the enemy from that city.

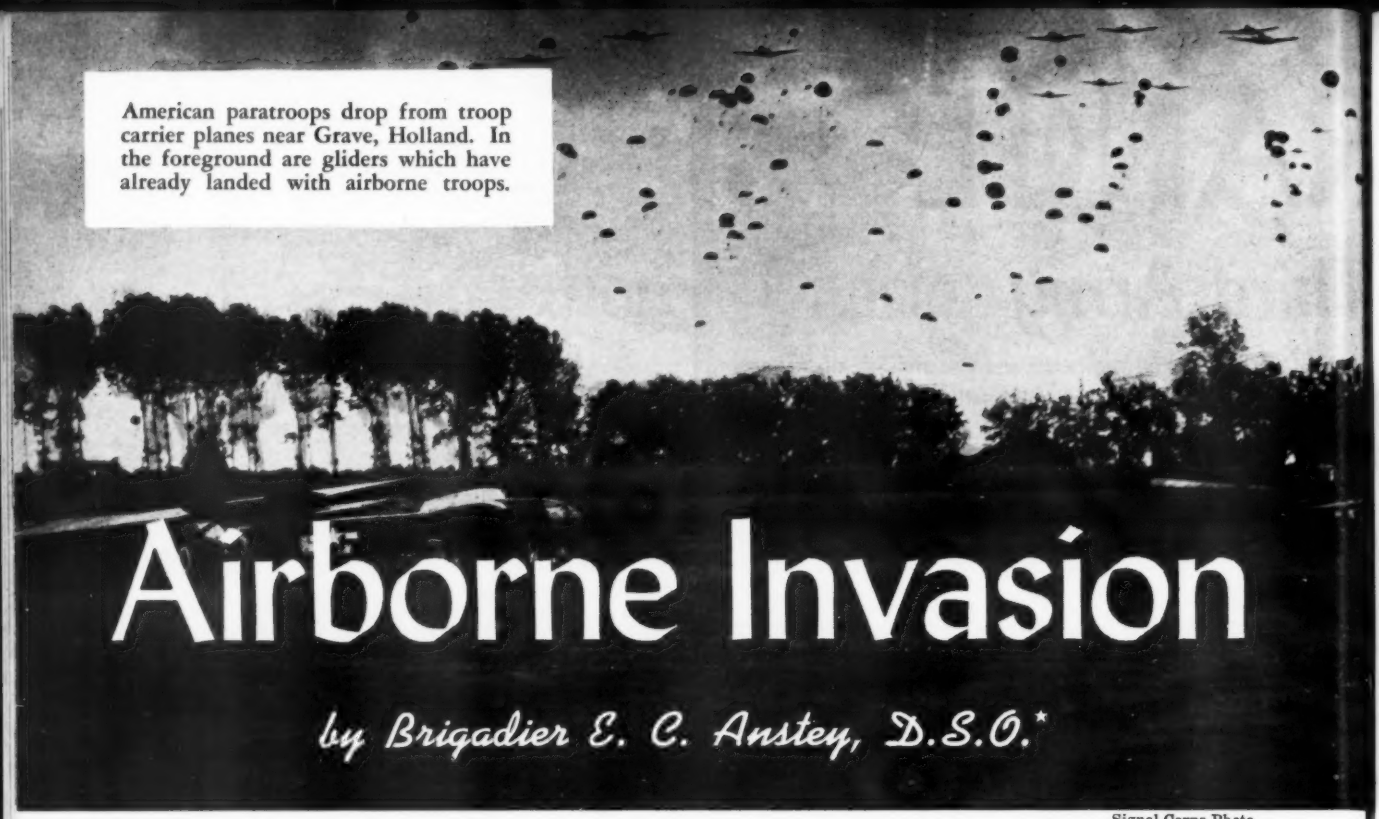
As CC "B" forced the south crossing at Bayon, some tanks forded the 25-foot deep dry canal and the river before engineers could span the blown bridges. The north crossing at Dieuleuard was effected by CC "A." The pincers closed in the vicinity of Arracourt and cut across RN 74, main highway northeast from Nancy.

While the massive Moselle bridgehead through Nancy was being consolidated the division withstood the heaviest German tank attacks launched in the battle of France. In two weeks of the unabated armored battle (up to September 28) Mark IV, Mark V, and Mark VI tanks, supported by Grenadiers were thrown back with heavy losses to the enemy. The American tankers destroyed as many as 350 German tanks, many of them Mark V Panthers, at an average rate of 8 enemy tanks to one of their own.

The Germans, who first described the division in broadcasts as "The American Elite 4th Armored Division," soon used less complimentary phrases in describing the division as a band of ruthless fighters. The German soldier knows it as the "4th Panzers."

A German colonel of SS troops who was captured by the 4th Armored near Lemoncourt when the division broke into the German rear areas across the Moselle, said:

"Having been a commander of army units in Russia, covering an area of approximately 1,500 miles, I must admit that the American troops are not only equipped with the best matériel, but what strikes me especially is the excellent organization under which these men function."



American paratroops drop from troop carrier planes near Grave, Holland. In the foreground are gliders which have already landed with airborne troops.

Airborne Invasion

by Brigadier E. C. Anstey, D.S.O.*

Signal Corps Photo

THE use of airborne armies is the latest offspring of the military art. Its birth was slow and painful. The conservatism of military thought was slow to adopt a novelty. It is curious that the Russian originators of the concept have confined themselves solely to parachuting, while their German disciples, who added air transports and gliders to their flying armies, were so disheartened by their first great airborne operation in Crete—successful though it was—that they refused to face again such losses as they then suffered and have since employed their picked and highly trained parachutists as infantry. It was left to the British and Americans to develop the airborne division of all arms.

A great deal of thought and experiment was necessary to devise the best organization and equipment for an airborne division, and to settle the principles of its employment. More and more, as time passes, logistics dominate military practice. Supply and transport have always controlled military operations; but in this war their problems have become more acute, more complex, and more dominating than ever before.

This is as true in airborne operations as in any others; logistics have dictated both airborne strategy and tactics. The simplest way of appreciating these logistical problems is to work backwards from the tactical to the administrative.

Tactics demand that the troops should be landed in the shortest possible time in a concentrated space so that the enemy's defenses should be surprised and the full airborne force ready for action before the enemy's reserves can arrive. From this it was deduced that it would be necessary for air transports to arrive on each landing ground at the rate of one aircraft every ten seconds. That was the fastest rate of landing believed possible to attain, and then possible only in daylight.

From the airman's point of view it was desirable that the whole landing operation should be over in half an hour so as to avoid a heavy concentration of enemy fighters gathering against the air fleets. As one machine-per-10-seconds was the maximum speed of arrival, it followed that the size of the airborne force which could be landed in half an hour depended on the number of landing plots or areas available. An airfield or open zone of good size could, of course, be divided into several landing areas. Such, therefore, were the tactical conditions which air administrative staffs had to meet. They had to arrange for a stream of aircraft flying into each landing area, at intervals of 10 seconds.

At first sight the problem appeared insoluble, for it was not possible for heavy transport planes to leave any airfield, however large and well-equipped, at 10-second intervals. When the problem was being studied, the minimum time taken by heavy bombers to leave the ground in succession was three minutes. By combined study, training in Britain, and the strictest ground discipline and control, the time was cut to 30 seconds. It was an astonishing feat of efficiency; but it was clear that it was the highest speed that could be attained.

A system was accordingly devised by which the aircraft taking off at thirty-second intervals, flew in the opposite direction to their objective for perhaps 10 miles and then turned on to their true course in formation on a timetable of seconds, which brought them into file ten seconds behind one another. So far so good.

*Military correspondent of the *Sunday Times* and *Daily Sketch*, London.

The next problem was to ensure that the squadron arrived at its objective in exact time and fitted into its proper place in its own stream without jostling anybody else. Obviously, on the basis of one stream per landing area, and the larger the force, the more numerous the streams; and consequently the more numerous the points of departure. For the Eindhoven-Arnhem operation, for instance, 25 airfields in Britain were used as airports of departure. Moreover, the fighter and fighter-bomber escorts had to be considered.

They were planned on a very large scale, for transport machines flying in low are extremely vulnerable, not only from fighters in the air but from flak on the ground. Escorts had to be provided both above and below the air fleets, fighters above and fighter-bombers below. It is not sufficient to attain general or local air superiority in the theater of war. Superiority has to be asserted and maintained during the whole operation.

Accordingly, while fighters accompanied the fleets and patrolled at high altitudes, fighter-bombers not only attacked and silenced the ground defenses before the transports arrived but, weaving in and around during the whole operation, kept the guns silent. Enemy gun crews were not only driven under cover but were kept there. That was why the percentage of loss amongst the air transports during the initial landing was as remarkably low as only 2 per cent.

It can be seen, therefore, what a massive operation the Eindhoven-Arnhem landing was. The British division was given the task of capturing and holding the most advanced point, the Arnhem bridgehead; the supporting forces of the operation were carried out by American and Polish troops. The 9th American Transport Carrier Command and the British 38th and 46th Groups provided the machines. They used 25 airfields, from all of which the streams had to converge like tributaries joining a river until they should flow evenly and punctually onto the landing fields in Holland.

That is a problem with which military staffs are familiar. On land it presents small difficulties when roads are adequate. But the air staffs controlling the air armada were dealing with aircraft of 12 different air speeds. The airfields from which they came covered a large area, in which wind conditions varied. Nor would these conditions be known accurately until the hours of start approached. Schedules had to be drawn up, therefore, accounting for all these conditions. Routes were chosen on to which the streams converged, avoiding enemy antiaircraft defenses, zones in which his fighters might be active, or areas where other Allied air forces might be coming or going on other missions.

On these routes 9 control points, easily recognizable from the air, such as the North Foreland—a promontory on the Kentish coast—were chosen and the hour, minute and second at which each machine should pass the point were tabulated.

At the last possible moment the direction and strength of the wind for each route was ascertained and notified, and the necessary adjustments made to the timetables.

A little thought will show that these tables, on which the accuracy of the whole operation hung, could not be completed until the landing grounds in each zone were known. Those grounds had to be decided in concert with the airborne staffs, for their choice was governed, so far as air technique allows, by tactical considerations. The soldier says how he would like to be landed; the airman explains how far those wishes can be met; the soldier then amends his plans accordingly; and the two staffs begin to work out their orders.

From that moment, some time elapses before the expedition is ready to start. It will suffice to say that it is anyhow more than 24 hours. If any change is made in the army plan after the final conference, confusion and delay may be caused. This preparatory period is longer on the army than on the air side because the army detail is greater and more complex.

It is essential that every man in the airborne divisions should know exactly what his job is and what his commander's intentions are. Similarly, the briefing of air crews must be so thorough that every member knows all there is to know about the operation.

From this brief survey it is evident that an airborne operation takes time to arrange. Many which have been prepared since the landing in Normandy have been cancelled, either because the land forces overran the objectives before the air forces could arrive, or because of bad weather or some other disturbing cause.

The air staff work has been brought to such a pitch that the orders of a group for an airborne operation can now be produced in 24 hours. But the military side is bound to take longer than that. It is possible, however, that experience will reduce it. In that case the value of an airborne force to an army will be greatly enhanced.

The first two British gliders to touch down at Arnhem September 17. Damage to gliders was caused by wing tips interlocking. In the foreground are a trailer and jeep which have just been unloaded from the glider. Nearly 2,000 British troops of the Airborne Division were evacuated from Arnhem after their stubborn eight-day fight.

British Official Photo

Greece—A Résumé, October, 1940-October, 1944

by George Haniotis

TODAY the Germans are pulling out of Greece as fast as they can, and one Greek city after another again breathes the air of freedom. Another dark parenthesis in the long history of Greece is closed, and the free people of the mountains and valleys, forgetting the miserable conditions in which the Germans left them, are celebrating their new freedom with an enthusiasm touching hysteria.

History will record the resistance of the Greeks to the Axis powers as an outstanding example of patriotism. When Greece was attacked by Mussolini's legions in October, 1940, the situation in Europe was such that any attempt on the part of a small people to defy one of the Axis partners seemed to be sheer folly. Poland, Norway, Belgium, Holland and France were prostrated under the Nazi heel. England was being bombed constantly by the Germans who hoped to break the nerve of the British people, and there was no indication of what the outcome of the war would be. This situation alone would have been enough to make any nation think twice before attempting to defy the armies of Mussolini and Hitler. Greece, with a little less than 8,000,000 inhabitants and with an army, small in number, poorly equipped and inadequately trained for modern warfare, and with almost no hope of getting any substantial help from any quarter, had to face the mechanized might of Mussolini, behind whom stood the German war machine—considered at that time to be unbeatable.

Moreover, the Greeks did not have a wealthy country to defend, nor did they have even a tolerable standard of living. Most of the soldiers who were to fight had no wordly possessions to fight for. A compromise with Mussolini, who demanded bases in Greece for his war against the democracies, could hardly have found any critics if material values alone were to be taken as a criterion. But the Greeks did not stop to ponder on the inequality of the struggle nor to compare war logistics. Their country was attacked and that was a very good reason to fight. It has happened often before in their long history.

This determination to die rather than yield had far-reaching consequences. For several days the Greek forces fought a delaying action until mobilization was completed. Then they counterattacked and rolled the invaders back beyond the Greek frontier and deep into Albania.

The Italian attack was a masterpiece in its conception. Instead of attacking at the northern end of the Greek-Albanian frontier, using Koritza as a base and driving to Salonika (a plan that Greek headquarters had long anticipated) the Italian command chose to attack through the Pindus Mountain Range to reach Metsovo, thence across the plain to the rail center of Larissa, and cut Greece in two. At the same time, sent they another column driving southward toward Jannina.

The bulk of the Greek forces covering the frontiers were up north in the Koritza sector. Thus the forces defending the Pindus were very small. Early on October 28, 1940, Italian columns penetrated into the Pindus region against weak opposition, while in the Koritza section farther to the north they were held at a standstill. According to a high foreign military authority, the Italians had a masterly plan—but no soldiers to put their hearts into it. The Greek headquarters had guessed wrong—but had soldiers who were ready to die in defense of their homes. In the Metsovo and Jannina sectors there were cases of Greek battalions having to face whole divisions.

The most dramatic episode of the war (which has not been sufficiently known) was the penetration, almost unnoticed, of an Italian column through a ravine of the Pindus Mountains to within ten miles of Metsovo. The capture of Metsovo by the Italians would have brought them onto the Larissa plain and would have ended the war disastrously for the Greeks in a very short time.

As the Italians approached Metsovo, however, a miracle occurred. The Greek defenders climbed up the steep mountains around the valley and, flanking the Italian column from both sides, fought for three days without relief, while the women of the near-by villages helped the men by bringing ammunition high up to the

Greek sentries guard a vital pass in the Pindus Mountains during the Greek-Italian war. Italians were turned back.

peaks where only goats were thought to be able to climb. In view of the danger, a cavalry regiment was dispatched from the northern sector and, after a forced march, arrived in time to support the defenders. The Italian column, which consisted of the Italian Julia Division and other mountain elements, was then ultimately forced to retreat in confusion. *That was the turning point of the Italian invasion.*

With this precious time won, Greek mobilization was completed. Greek citizens offered their private cars and commercial vans to carry the troops to the front. The Greeks then counterattacked and by November 10th, two weeks after the invasion, the Italians were in full retreat.

By the end of February, 1941, the Greek army had captured many Albanian towns, many thousands of Italian prisoners and abundant matériel. The captured matériel, which the Greeks had needed badly, was used to advantage against the Italians.

It is worthwhile mentioning that when the Italians attacked Greece, the Greek air force did not even number 100 planes and most of them were obsolete. The military achievements of the Greek soldiers were not, as is apparent, the result of preparation, but rather the result of the will to fight for their country.

For six months the Greeks kept their country free from the Italian invaders until the Germans, losing patience, broke through Bulgaria and Yugoslavia into Greece. With the Germans breaking into Greece behind the troops fighting the Italians in Albania, collapse was inevitable. The help sent Greece by the British after the German attack was "too little and too late," and in spite of the gallant fight of the British troops, the last Greek territory was occupied by the Germans by the end of May, 1941. Thus the Greek army had kept the Axis busy for seven months.

The Nazis never forgave the Greeks for upsetting their timetable. Greek resistance to the Italians and the inability of the latter to finish the job obliged the Germans to send their troops to eliminate that small country which was serving as an obstacle to their plans. Military critics believe that Greek resistance gave valuable additional time to the Russians. But one should not forget the moral effect of the determination of a small people to face death rather than accept slavery at a time when the Axis was astounding the world with its military successes.

There were no means of evacuating the Greek forces before the Germans occupied the country. When the Greek soldiers received orders to disband, they took their rifles with them and hid them in cellars and caves, waiting for a chance to use them again in organized guerilla bands. Guerilla warfare has been a tradition of the Greeks since their war of independence against the Turks in 1821.

By using British boats many soldiers managed to escape, and even after the occupation many more slipped through the Nazi lines and reached Egypt, where the nucleus of a new Greek army was being formed by the Government-in-exile. Both inside and outside Greece the fight continued. Two infantry brigades were formed in Egypt. These, together with the Greek air force and the Greek navy have rendered valuable service to the Allied cause in the Mediterranean theater of war. Greek troops fought at El Alamein, in Tunisia, and recently captured Rimini in Italy, and the Greek navy participated in the operations in Italy and southern France.

Greek troops rest in the mountains of Albania in 1940-1941. The picture gives some idea of the physical difficulties of campaigning in the wild snow-covered countryside —further tribute to the magnificent morale of the Greeks in their sturdy, determined resistance to Axis aggression.

Meanwhile, Greek guerillas at home were relentlessly harassing the Germans. The population of occupied Greece, in spite of privations, mass executions, and starvation, kept the fire of liberty burning in their hearts.

On October 12, 1944, the Athens radio station again acquired its own soul and its own voice and announced to the world that "Athens is free." A few days earlier British detachments and air force units had landed to the south in the Peloponnese and had cleared the region. As soon as the situation farther north in the Balkans presented serious threats of entrapping them in Greece, the Germans started concentrating their troops in various centers for evacuation. They were harassed and attacked by Greek guerillas, who by their action precipitated the evacuation.

The sun of freedom which has arisen again over Greece, shines over material ruins. Seldom in history has a people attained in such a short period so much glory in the way they defended their freedom, and so much misery in what they have suffered. The lack of food, the unparalleled inflation, the complete disorganization of transportation, the lack of medicines, and so many other results of the German occupation present a very serious problem. Nevertheless, the Greeks are jubilant over their freedom and hopeful for their rehabilitation.

Christmas Message

To the Officers and Men of the Army Ground Forces:

This is our fourth Christmas at war, and I should like now to reassert my pride in our war Army and my gratitude for its splendid accomplishments.

On our first war Christmas, while both our enemies roamed almost unchecked across the lands and seas they had marked for plunder, virtually none of our ground combat forces had yet left the United States. Today the story is happily different. Nearly all our ground forces are arrayed in massed strength in every corner of the world–not as green recruits thrown hastily into a last-ditch defense, but as a well-trained, highly skilled, mighty combat Army dedicated to the destruction of hostile forces, the liberation of conquered nations, and the establishment of lasting peace.

The cost of victory is never small, and we have had to pay a fair price so far. It is the lot of the ground soldier, and particularly of the Infantryman, to come to closest grips with the enemy, and both our enemies–strong, cunning, and resourceful–have clearly shown their intention not to yield without having first exacted all toll possible of our men.

In the campaigns of the last three years, many of our ground soldiers, including General McNair, our great former commander, have given their lives in battle. For them, there can never be another Christmas. For those of us who must carry on the fight for which they gave so much, no Christmas can be truly merry until we have finished the job they started.

I know that you American ground soldiers will finish that job, and finish it well. I have seen you grow old and wise in the ways of war, out-smarting our enemies, winning the admiration of your allies and the everlasting respect of your fellow countrymen. You deserve a fine Christmas. To those of you who are still waiting your turn to meet the enemy and hasten our victory, and to those of you who have already achieved so many great triumphs, I extend my sincerest congratulations and wish you the best Christmas a soldier can have.

COMMANDING GENERAL, ARMY GROUND FORCES.

Editorial Comment

Our Fourth War Christmas

Our fourth war Christmas finds a war-weary world still embroiled in a titantic struggle—a bitter life and death struggle brought about by a group of maniacs who sought world domination and the enslavement of peace loving nations. Many countries have been ravaged by this ruthless enemy. Cities, towns, and villages have been demolished in wanton carnage.

You in our armed forces overseas have seen the death and destruction in countries there and are making certain that a similar fate will not befall your own home and loved ones. You are doing your utmost to bring the war to a speedy and victorious end. You are imbued with an indomitable spirit and determination to win the fight regardless of the difficulties involved. You will continue to fight and gain that victory because you have something within you that the enemy does not have. It is faith in God—faith in your country, faith in yourselves, and faith in prayer.

So to our fighting forces everywhere we send our Christmas Greetings with a humble prayer to Almighty God to give you continued strength and courage until victory brings you safely home to a "Peace on Earth," resolutely won and firmly established.

Message from Japan

The following 100-word letter from Brigadier General Clinton A. Pierce, received by his cousin Walter E. Blythe on August 10, 1944, is published here as a matter of interest to old friends of this one-time cavalryman.

As a colonel of cavalry, General Pierce commanded the famed 26th Cavalry Regiment (P.S.) during its valiant rear guard action in the Philippines. He was later promoted to a brigadier general during the fighting on Bataan, served with General Wainwright throughout the Philippine defense, and with the surrender of Corregidor became a prisoner of the Japanese.

General Pierce's letter is one of the few received from cavalry officers who are held as prisoners of war in Japan.

13 October 1943.

Dear Cousin:—

Your sketch and note sixteenth April, 1943 received. Many thanks news, wishes, cartoon. Congratulations, Grandpappa—my best Ruth, Clinton.

Health good; climate dry, temperate, working on farm, studying, reading spare time.

Glad Mother well. Are allotments her continuing and sufficient? No mail from her. Have written.

Remember Clark Lee, Luzon and Bataan. Glad he got out. Would like read book.

Nice you contacted Al and Herb. Trust they received my letters Stotsenburg, antebellum. Margaret mentions Herb and Rogan Morrison.

Please circulate. My best Elizabeth, Uncle Gene, you. Chin *is* up. Plan for happy reunion.

CLINT,
CLINTON A. PIERCE
Brigadier General
U. S. Army.

To Walter E. Blythe,
9123 – 112th Street,
Richmond Hill, New York, U.S.A.

Horses on Leyte

With 6th Army Forces on Leyte, P. I.—Nov. 2—(Delayed)—(AP)—Among the more prominent repatriates on Leyte are 7 army horses. . . .

For almost 18 months since the 1st Cavalry Division came overseas it fought on foot like many an infantry division. . . .

Soon after landing near Tacloban on October 20, the dismounted cavalrymen fought their way across Tacloban's race track, and not a man in the outfit missed the sight of several horses roaming near by.

Even Major General Vernon Mudge cast an appraising eye on that horseflesh. It was not long before Captain Don Walton, commanding reconnaissance troops, received an order to round up all available horses in the area. He delegated the job to 1st Lieutenant Muir Humphrey, whose men picked up several horses in rice paddies near the race course, and much to their amazement found that they were American cavalry horses which had belonged to the 26th Regiment at Bataan.

Filipino guerrillas turned in some ponies and farmers contributed a few more that they had corralled. The natives also brought up all the old saddles they could find, including three regular army saddles which had survived the Japanese occupation.

The above dispatch from the Philippines is interesting not only because of the recapture of several horses of the 26th Cavalry, but also because of the fact that all available horses and saddles were collected from guerrillas and natives for use by the reconnaissance unit.

In his Notes in this issue, General Hawkins comments on a previous experience in 1898—when dismounted cavalry was sent to the Philippines and fought as infantry. When a few horses were sent over the

following spring, the mounted troops proved so valuable that the whole regiment was remounted.

This experience, coupled with the exploits of the 26th Cavalry in Luzon, exemplify the need for *mounted* cavalry in the Philippine campaign.

The 1st Cavalry Division has been and is fighting successfully without its mounts—but may history repeat itself and the need for cavalry become paramount.

Maintenance

I call on each man and woman serving with the Army of the United States to unite in a campaign of Preventive maintenance . . . to abolish the menace of mechanical failures . . . this is your responsibility. . . .

SECRETARY OF WAR STIMSON.

The difference in taking 5 or 10 extra minutes to make sure your vehicle will keep rolling, or letting it go for the maintenance section to repair for 5 or 10 hours may not only cost your life, but may mean the annihilation of a whole regiment or division. Any driver who wilfully or carelessly neglects his vehicle is as guilty of sabotage as though he had actually tried to destroy the vehicle.

LT. TRAVIS CRAMB,
Motor Office of the 30th Cavalry.

The military value of an armored element is directly dependent upon its ability to utilize its inherent speed, mobility, protective covering and heavy firepower. Therefore, it is obvious that preventive maintenance in every unit must be brought to a high degree of excellence . . . maintenance is a factor which all commanders must consider at all times. Where you find excessive breakage, you find faulty leadership . . . the driver of each vehicle is the first echelon of maintenance. He must be fully trained and qualified to perform his maintenance duties promptly and intelligently. A failure on the field of battle usually results in needless risk of life and equipment.

MAJ. GEN. A. C. GILLEM, JR.
Commanding General of the Armored Command.

Hardening of Horseshoes

The following paragraph, recommended by Colonel Albert E. Phillips, will be published as a change in TM 2-220 and filed for inclusion in the next revision of FM 25-5.

"As horseshoes now issued on revised specifications are of 1025 carbon, hardening of the metal through its entire thickness is obtainable by heating to a red glow and cooling in water. The resulting temper gives a reading of 36 Rockwell "C" Test, as compared with a reading of 29 for untreated high-carbon tool steel. With 1025 carbon steel shoes, it is unnecessary and inadvisable to use chemical "case-hardening" methods formerly used with low-grade 1010 carbon steel shoes. The method hardens only .007 inch—a thin-paper shell—and leaves the remainder of the metal annealed or softer than before heating."

Overseas Edition

THE CAVALRY JOURNAL is now available in a special "overseas" edition which, except for size, is the same as the regular CAVALRY JOURNAL publication.

This new edition, approximately 5¾" x 7¾", was adopted to save shipping space and to provide a Journal which can be slipped into a pocket and read at intervals when time is available.

Originally intended only for overseas subscribers, this pocket-size edition is now also available for persons still stationed in the United States. If your assignments keep you on the move, or if you are cramped for storage space, or if for any other reason you would prefer the "overseas" edition, please notify the Cavalry Journal office, and the small edition will be sent to you.

Wrong Addresses!!!

Is your name here? Can you help locate these missing addresses? Send in your correct address, and your CAVALRY JOURNAL will be mailed you at once.

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Major Ford E. Young, Jr.
Lieutenant Harry C. Zeskey

General Hawkins' Notes

Cavalrymen—*Mounted, Dismounted and Mechanized*

Two recent letters from young cavalry officers serving with cavalry reconnaissance squadrons in France and Germany take exception to the statement in my Notes in the July-August issue of THE CAVALRY JOURNAL to the effect that "The United States and England will have no cavalry in coming European operations." They call attention to the fact that many cavalry reconnaissance squadrons landed with the first troops in the invasion of Normandy and have been fighting gallantly and effectively ever since; that in addition to reconnaissance these squadrons have performed all sorts of cavalry missions.

Members of these cavalry reconnaissance units are cavalrymen; they are called cavalrymen and wear the cavalry insignia. Instead of using horses, however, they use armored cars and jeeps. These young men are proud of being cavalrymen, and they want these facts known.

The Cavalry Association, in turn, is proud of these cavalry squadrons, trained in cavalry traditions and cavalry principles. The 1st Cavalry Division also is serving with distinction, in the Pacific theater of operations and without its horses.

This is not the first time that U. S. cavalry has been sent into active campaigns without its horses. A dismounted cavalry division, sent into Cuba in the Spanish-American War in 1898, fought in the Battle of Santiago. Lack of transportation for the horses was given as the reason that they were left behind.

The same year the 4th U. S. Cavalry, dismounted, was sent to the Philippines, and fought dismounted as light infantry during the first few months of the Philippine insurrection which broke out in February, 1899. During the late spring and early summer of that year some troops of the 4th Cavalry were mounted again on their horses which had been shipped from the U. S. They proved so valuable that during the ensuing summer the whole regiment was completely mounted. A little later several other cavalry regiments were sent over, with their horses following in regular horse transports. The folly of not having sent mounted cavalry over to the Philippines originally was responsible for the prolongation of the campaign which carried the insurrection into several years. This fact has been referred to and explained in these Notes in other issues of THE CAVALRY JOURNAL.

Wherever our cavalry has fought, mounted, dismounted, or mechanized—as is now the case in Europe—it has distinguished itself. The exploits of the mechanized squadrons of cavalry now in Europe should not be overlooked, but I am convinced that large forces of cavalry, using horses, could, in combination with mechanized forces, shorten the war there and save thousands of lives.

Undoubtedly, the cavalry reconnaissance units are doing splendid work, but no matter how well trained they may be, however skilful, however gallant, however efficient, they cannot perform ground reconnaissance as well, or as safely, as they could if they were supported and assisted by strong horse cavalry units. The idea that, on any terrain except a desert devoid of trees, creeks, rivers, mountains and other natural obstacles, a unit whose men ride in armored cars and jeeps can explore the country thoroughly and safely is preposterous. A skilful enemy can lay traps and ambuscades for such an outfit. This will not only interfere with effective reconnaissance but will often result in destruction of a large part of the unit. There can be no stealth with noisy motor vehicles. Thick woods, muddy ground, difficult mountains, and plains intersected by creeks cannot be reconnoitered thoroughly except by horsemen.

A proper combination of horse soldiers with mechanized soldiers can be very effective, as shown by the Russians both in reconnaissance and in large offensive attacks against the enemy flanks and rear.

Our cavalry is serving in this war in dismounted and in mechanized units. And many cavalry officers are serving in the infantry and armored forces, various staff groups and high commands. We at home are very proud of them all, and take off our hats to them with great humility.

AN UNSEEN ENEMY—

In Europe today, tuberculosis is raging with epidemic force. It must not happen in America. Yet Americans are dying at the rate of one every nine minutes—right here in this country—from tuberculosis.

Christmas Seals are in the foreground of the fight against this dread disease. Buy Christmas Seals. Use Christmas Seals. Help thwart the spread of a perilous enemy!

RED ARMY COSSACKS

Part II—Equipment, Arms, and Armament

by Major Robert B. Rigg, Cavalry

Equipment Under the Czars

IMPROVEMENTS have been made in Cossack equipment since the days of the Imperial Russian Army when the Cossacks were obliged to furnish their own individual military needs. In Tsarist days when a youth began military service his family had to outfit him with horse, uniform, saddle, bridle and personal accouterments. Prior to accepting *Kazak* youths, Russian army officers used to hold assemblies for the purpose of inspecting equipment. The latter had to meet army standards before the Cossacks were sworn in. If serious defects were found in a Cossack's horse he would have to obtain another mount quickly from a friend or relative.

Earlier in history this system worked well enough, but at the beginning of the 20th Century it showed signs of being outmoded. For one thing it worked a serious handicap on the poorer Cossack families who had to spend a great deal of money on necessary equipment. Training and combat took their toll on uniforms, etc. In the Russo-Japanese War military observers commented on the fact that the Siberian Cossacks failed to "hit the ground" and skirmish dismounted enough because these cavalrymen were trying to conserve their few clothes.

Personal Equipment Today

Soviet Cossacks are now equipped and armed by the Red Army the same as all other Russian soldiers. All Red Army men are taught to take good care of their equipment. Economy is the keynote, and little is wasted. In details, Soviet military equipment will vary, but this is because every available item and weapon is used. In the field discipline is strict on the matter of property responsibility, and even a wounded soldier is not excused for leaving his rifle behind on the battlefield.

Every Cossack carries a saber, even in units such as communications or artillery. The standard Red Army saber is similar to the old U. S. Army cavalry blade except that the Russian model lacks a hand guard. A thong secures the weapon to the wrist when it is unsheathed. Mounted, the Cossack hangs the saber from the left side of the cantle; dismounted, he carries the weapon on his left waist belt.

All Red Army cavalrymen are issued cloth ponchos which have a hood to protect the head. These are carried on the very top of the cantle roll when not in use. Each cavalryman is issued one shelter half, but in combat he is not likely to use it as much as his *burka*.

First-aid kit, emergency rations, soap, a sack with rifle cleaning equipment, extra underclothing, toweling, and personal possessions are normally carried in the saddle bags. Gas mask, canteen, and a pail-like mess kit, plus spoon are other items of individual issue.

Saddle Equipment

There is nothing outstanding about Cossack saddle equipment. In general the same practices and procedure apply to Cossack cavalry as are common to the cavalry of other armies. Extra horseshoe nails are carried. Bridles, bits, feed bags and saddle blankets conform to the average cavalry equipment and warrant no further comment.

Saddles vary between the Cossack saddle, the standard Soviet cavalry saddle, and some miscellaneous types. Cossacks can be seen using Caucasian type saddles as

3mm FIELD GUNS AT GUNS MORTARS TACHANKI RIFLEMEN

well as occasional English ones. Front and rear saddle bags are used, and there are prescribed items for each pocket. Cossack saddles have the usual cantle and pommel rolls.

The regular *Kazacheski sedlo* has a peculiar pillow seat which is uncomfortable to the horseman who does not ride in Cossack fashion, *i.e.*, considerable weight on the stirrups, no posting at the trot, and a forward, almost standing seat at the gallop. This pillow seat on a Cossack saddle is made of a heavily padded and quartered leather cushion which eventually becomes shaped by the rider. There is a small wooded horn at the pommel and cantle. The stirrups are metal. There is normally a three-strap girth on the saddle which has the usual skirts.

The regular Soviet cavalry saddle is an improvement over the more ancient Cossack saddle, although the latter is used often by non-Cossack elements. The standard Red Army cavalry saddle is somewhat like the English flat saddle except that it has a higher cantle and pommel.

Weapons

The Saber. The only large modern army retaining the saber for combat use is the Red Army. Every line Cossack carries this weapon. Despite its antiquity as an instrument of war the Soviet saber has added many enemy dead and wounded to its present-day record. There is an old Cossack saying, "The saber is always loaded."

Some may wonder if the saber has been successfully used enough in this war to warrant retaining the weapon. The Soviet answer is *yes!* Actually, it must be realized that the saber is the least important and least used of all Cossack weapons, but occasionally it finds a very useful place in the fighting.

The Russians, and particularly the Cossacks, have retained the saber because they are *very* skilful at using it. In the hands of some nationalities the saber is not a particularly effective instrument. One only has to witness a Red Army saber course and the manner in which Soviet horsemen wield this "mounted bayonet" to appreciate the effectiveness of the saber in *Russian* hands. There are *no* half measures in the Russian use of the saber mounted; the blade is slashed to *kill*—not to wound or stab. For generations Russian armymen have related battle instances where bodies were split or halved by a single downward stroke of a cavalry saber. This was always a Cossack goal, and years ago these horsemen set the masterly pattern for the use of the saber.

The Cossack carries either a rifle or a tommy gun with the rifle predominating. Rifle boots are not used as the rifle is simply slung diagonally across the horseman's back. This is not too comfortable for the rider, but his weapon is with him when he dismounts. Russian enonomy may account for the nonissue of a rifle boot, although some armies prefer that their cavalrymen carry the rifles on their backs.

Sovfoto

Don Cossack Guardsmen rest in the foothills of Carpathians on the second Ukrainian front, May 1944. Soldiers clean sabers and firearms, while a Red Army nurse gives first aid to minor wounds. Note length of saber.

The following weapons are also used by Cossacks, as well as other Red Army cavalrymen:

The Mossin-Nagant M 91/30, 7.62mm (.30 caliber) is the basic rifle. It weighs 9.9 pounds and takes a 5-round clip. The maximum effective range is about 900 yards. There is also a Mossin-Nagant Sniper rifle.

The Tokarevs M 1938 and 40 are practically identical semiautomatic rifles, also 7.62mm. Weighing 10.8 pounds, each has a 10-round magazine loaded by 5-round clips and a practical rate of fire of 15 rounds per

←

This panorama of the components of a Cossack raiding unit shows weapons carried by Cossack raiding parties, which always have a high proportion of automatic arms. The small raiding party may dispense with the field artillery while a large unit may be augmented with tanks. All raiding units are followed by light trains carrying food, ammunition, etc.

minute. There is also an M 40 Tokarev carbine and a sniper's rifle.

The PPSH, Model M 1941, Tommy Gun, weighing just over 10 pounds, is a handy weapon and a Cossack favorite. The gun is 7.62mm, and takes either a 72-round circular drum, a "half-moon" type, or a straight clip; the latter two clips hold about 22 rounds of ammunition each. The straight clip (such as found on the Thompson submachine gun) has proved to be the most practical, and it has now replaced the large circular drum. Red Army men are devoted to their method of slinging this tommy gun. The sling strap on the weapon allows the gun to be suspended from the neck and left shoulder in a "ready to fire" position. This method of carrying the submachine gun is particularly advantageous to the mounted cavalryman or to the officer whose hands should normally be free to handle maps, field glasses, etc. Thus suspended, the tommy gun can be quickly brought into play.

All officers carry pistols, but the variety of models in use in the Red Army is too great to describe here.

Armament

The Russians have several types of hand grenades ranging from the Mills type to the antitank hand grenade. Details are lacking on the specific models used by Cossacks, but it is believed that they employ almost every type.

Aside from the small weapons carried by individual Cossack soldiers the regiments are equipped with the following weapons:

The Degtyarev Light Machine Gun, Model 1928. This bipod-mounted 7.62mm weapon has a circular ammunition drum that rests horizontally on the top of the gun. A gas-operated weapon, it weighs a little over 20 pounds and is generally comparable to the U. S. BAR. The Degtyarev has a cyclic rate of fire of 600 rounds per minute and is considered effective up to 1,000 yards.

The Maxim Heavy Machine Gun, Model 1910, is a weapon that has proved its practicability and usefulness in two world wars, as well as having been consistently used by both sides during the Russian Civil War. The water-cooled model is on the Sokolov mount, a low pintle frame with two small metal wheels and a trail. On this mount the gun weighs about 135 pounds. The machine gun is a 7.62mm weapon, recoil operated. The Maxim MG can fire 200 to 300 rounds per minute and is fed by a 250-round belt. While sighted up to 3,000 meters (3,280 yards) the effective range is considered to be 1,000 yards. This old, but still practical weapon, with its small metal shield is regularly used on the *tachanki.* In winter a white cloth camouflage sleeve fits over the water-cooled barrel. (See photos 1 and 2.)

The 7.62mm Degtyarev Heavy Machine Gun, Model 1939, has cooling fins on its air-cooled barrel. It is similar in design to the 12.7mm machine gun below, but is mounted on a tripod. Like the Maxim, it can be fitted with large concentric ring sights for AA.

The 12.7mm AA/AT Degtyarev Machine Gun is belt-fed and has a reported range of over 2,500 yards. Its rate of fire is about 600 rounds per minute. The piece is gas-operated and has been used as an AT weapon as well as for its normal AA purpose. It has a three-man crew.

The 14.5mm Degtyarev Antitank Rifle, Model 1941. The Cossacks and Red cavalry have used this AT gun to great advantage. The weapon is one of the outstanding small AT pieces of the Red Army. It is a .57 caliber long-barreled, bolt action, single shot antitank piece which was once nicknamed the "20th Century Lance" by the Cossacks who for a while carried it on horseback in lance fashion. Today, however, the gun is borne on a pack animal. The pack saddle has a special bracket which will permit the gun to be fired from off of the horse at enemy aircraft when necessary. In addition to saddle bags carrying feed for the horse, there are two ammunition bags which hold approximately 100 rounds of ammunition.

USSR Press Photo

Cossack guardsmen man an 82mm mortar (M1941), December 1943. Tommy guns are strapped to backs. Russian Tommy guns now have box magazines, which make them easier to carry and ready for instant action. Note mortar shells in foreground.

Cossack guardsmen haul a 76.2mm gun (M1942). This is a very light field gun with muzzle brake. Carbines are M1924/27.

The 45mm Antitank Guns, Models 1932 and 1937. These weapons are almost identical, and form the AT battery of the cavalry regiment. The guns are horse-drawn and have a small limber. In typical field artillery fashion one or two men ride the limber while another two are atop two of the four horses drawing the gun. Behind the latter, another 4 animals with a limber and caisson complete the gun section.

The 45mm AT guns are rubber-tired and weigh about 1,000 pounds. These closely resemble the German 37mm gun. The weapon fires both HE and AP shells.

Mortars. The 82mm mortars are commonly used by Cossacks and other Red Army cavalry. These weapons have a range of a little over 3,000 yards, and the practical rate of fire is 12 to 15 rounds per minute. There is a crew of 5 Cossacks per mortar, and each of these men is armed with rifle or tommy gun. (See photo 5.) Mortars are transported on a rubber-tired limber and caisson which are horse-drawn.

Artillery. This arm has an extremely important rôle in Cossack-cavalry operations. Without artillery weapons the Cossacks could not exist as a fighting force in modern war.

With each Cossack regiment there is a battery (4 guns) of 76.2mm howitzers. The cavalry division has normally a two-battalion regiment of field artillery. This artillery regiment has both 76.2mm guns and the very practical 122mm howitzers. In actual combat operations, however, Cossack and other Red cavalry units are not limited to their own organizational artillery, for this is usually supplemented by corps and GHQ artillery units.

The 76.2mm Regimental Howitzer, Model 1927, is a short-barreled, squat, box-trail gun with large artillery wheels. A very handy horse-drawn weapon which is used in Cossack and other cavalry units. It fires HE shells (range approximately 7,200 yards) and shrapnel shells which are reported to have a range of about 7,500 yards. This is an important close-support weapon which Cossacks use continually, and if necessary can even pull for short distances by hand.

The 76.2mm Field Guns. There are three modern models, the 1936, 1939 and 1942. The 1936 model is characterized by its 12-foot high-angled barrel; it has been used for AT fire. All models have split trails, and firing the HE shell they have an average maximum range of about 14,000 yards. Armor-piercing shells have a maximum range of about 7,000 yards. Both these and the regimental howitzer are greatly admired by the Germans who have used captured pieces.

The 122mm (4.8 inches) Howitzer Model, 1910/30 is the normal cavalry supporting weapon. It has a range of 9,900 yards with a 45-pound HE shell. The 122mm (4.8 inches) Howitzer, Model 1938 might be used. It has a maximum range of 12,500 yards.

Early in the war some Cossack and cavalry units were using the old Czarist model 76.2mm field gun (3-inch), both in original and modernized guns, but these have gradually been replaced by the more modern artillery weapons already mentioned.

Organizational Equipment

To date the Cossacks have favored the wagon or horse-drawn vehicle over pack animals and motor transport within the regiment. Thus, within that unit the forage, food, ammunition, etc., are hauled by 4 and 2-wheeled wagons. Their 4-wheeled wagons have the general appearance of U. S. farm vehicles. They are sturdy board-sided wagons and are usually drawn by two horses. Often they carry the less seriously wounded cases back on their return trip from forward echelons.

Field Kitchens or the actual cooking stoves are contrivances on a 2-wheeled carriage, usually drawn by one horse. Water carriers are iron tanks which are likewise mounted on the two-wheeled cart frame. In 1940 there were 125 horse-drawn vehicles in the Soviet cavalry regiment and only 6 motor trucks.

USSR Press Photo

The Red Army .505 Degtyakov 12.7mm machine gun, with which Cossack units are equipped, has a varying rate of fire—low for ground fire, high for AA. Mounted on a high tripod, it is steadied by a stone hanging from the center.

The Tachanki. These 4-wheeled machine-gun carts, developed during the Russian Civil War, have been a great favorite of the Cossacks ever since. Four horses pull these light carts. Harnessed abreast, the two outside animals can be cut away quickly in the event that they become casualties. The Cossacks favor this method of hitching over harnessing the horses in artillery fashion. *i.e.*, in column of twos.

The *tachanka* carries one Maxim machine gun (1910 Model) which is mounted so that the gun fires to the rear. The gun is so arranged that it can be elevated for antiaircraft use. A driver, gunner and assistant gunner make up the crew, all of whom ride on the vehicle. (See photo 1.) Normally, three riflemen on horses follow in the rear of the *tachanka.* While the MG is often fired from off the *tachanka,* it is SOP to dismount the weapon and place the vehicle and horses under cover when possible. Cossacks have on occasions actually mounted two MGs on one *tachanka.*

One of the main reasons that the *tachanka* is so favored by the Cossacks and Red Army cavalrymen is that it can carry a good supply of ammunition. In addition, the vehicle is extremely fast and maneuverable. *Tachanki* are frequently used on Cossack raids as they are not handicapped by having to carry fuel, and for a few days at a time the animals can live off the little forage carried.

The exact number of these light wagons to a Cossack regiment is not known, but one recent combat account mentioned platoons of them.

Communications

The author is not well enough informed on this subject to outline it comprehensively. However, one item is apparent, and that is that the mounted messenger plays a very important part in regimental communications. Before the war the Red Army cavalry regiment had a half squadron (half U. S. troop) devoted to signals and communication. This consisted of a dispatch rider section, one radio section, an air liaison section, and two telephone sections.

The author has seen odd-looking radio carts with Red Army cavalry squadrons. These carts were 4-wheeled, horse-drawn, and the radio was in a high box arrangement that made the whole thing look like a small hearse. The wagon has one advantage over pack transport in that a heavier weight can be carried, and this means more radio.

Cossack cavalry uses field telephones (their own and U. S. Army models), and very often relies on the use of signal flags and pyrotechnics.

Miscellaneous Comments

Soviet cavalry units have a very practical item in a special food container that a horseman can strap to his back like a pack. This flat pail is used to carry hot food to small cavalry elements which are out of touch with their field kitchens. These containers can carry roughly three or four gallons of stew, or similar semi-liquid food.

Details are lacking, but Cossack units are now using motor ambulances where possible. It should also be noted that the Red Army has special medical units, and the wounded of a cavalry regiment are not necessarily evacuated by their own medics.

Editor: *The third installment of Major Rigg's article on Red Army Cossacks, which will appear in the January-February* Cavalry Journal, *deals with Cossack organization, training, and combat.*

Close-up of the tachanka shows how the Maxim MG is mounted to fire to the rear. Normally the gun is placed on the ground, but it can be used off of the tachanka. Note how the belt is fed directly out of one of the ammunition cases. Some tachankas are four-wheeled; others, two. This photo of Cossack training was made May 1944.

USSR Press Photo

Hard pressed by the Cossack Guards unit, the Germans abandoned their guns and other war matériel.

Sovfoto

Cavalry Action Near Warsaw

by Major I. Poliakov

AS the Germans attempted a withdrawal toward Warsaw in August, they were confronted by the onslaught of Soviet cavalry, which charged through the gap created by the enemy's retreat and, pushing forward in rapid pursuit, forced a number of serious engagements. The cavalry squadrons, trained in making daring decisions and bold assaults, often attacked the enemy dismounted, and, where conditions permitted, on horseback.

At Siedlece, an important railway and highway junction, and a vital point of enemy resistance on the approaches to Warsaw, the Germans spared no effort to hold the town. They covered their retreat to the town by a strong rearguard of tommy gunners, artillery and mortar fire in addition to tanks and self-propelled guns.

The operation developed as follows:

The cavalry squadron commander, ordered to rout the enemy rear guards from one of the villages, first reconnoitered the enemy positions, and, convincing himself that the Germans had no organized system of fire, decided to attack mounted.

During the night the lieutenant prepared his squadron for action. Guns, mortars and machine guns were posted on the flanks. Then on a given signal the squadron, with all its fire power in action, changed from defensive to offensive action. Taking the Germans by surprise, the squadron cut through the ranks of the terror-stricken Germans and began to spread out toward the village. Pressed from the front by the cavalrymen and from the flanks by mortar fire and machine guns, the enemy rearguard was soon routed. Fifty of the enemy were killed and 47 captured.

The cavalry never misses a favorable opportunity to attack in mounted order. On the approaches to Siedlece there were many such examples. Squads, troops and even single horsemen galloped into action with drawn swords. On one occasion a lieutenant, with a small party of men, rushed into a populated locality and annihilated the crew of a self-propelled gun. Another lieutenant with a detachment of horsemen, raced up to a German train and, after killing the engineer captured 40 freight cars with food and armament.

Near Siedlece the cavalrymen encountered increased resistance as the enemy brought up reinforcements of two infantry divisions and one SS tank division. But in coöperation with tank units, the cavalrymen broke the enemy's resistance and cleared Siedlece.

In those battles which were conducted in dismounted order, cavalrymen also made good use of their horses. They maneuvered, changed position, and appeared wherever the enemy least expected them.

When a strong force of Germans broke through the ring and headed for Warsaw, a cavalry troop under Lieutenant Belanovsky leaped into their saddles and hurried forward in a direction parallel to the retreating enemy. The cavalrymen soon outpaced the Germans and after dismounting, established themselves on the Warsaw highway. As the Germans approached they were met with a withering fire from the troop which held its position until the squadron arrived and annihilated the enemy.

★By cable to THE CAVALRY JOURNAL from War Department, USSR, Moscow, September 14, 1944.

Cavalry Offensives in W

Make thorough Reconnaissance. Attack suddenly and aggressively. Attack enemy flanks and rear. Attack mounted or dismounted, according to situation.

SOVIET CAVALRY has participated in all winter operations of the Red Army. In December, 1941, the I Guard Cavalry Corps was successful in fighting against selected tank, motorized, and infantry divisions of General Guderian's Army which attempted to encircle Moscow from the south. In December of the same year, and in January 1942, the II Guard Cavalry Corps of General Dovator led the pursuit against the enemy retreating from the districts of Moscow, and several times his corps made destructive attacks on the Germans. In the Yelets operation the III Guard Cavalry Corps, also fighting under winter conditions, completed the destruction of an enemy corps.

The winter of 1942-43 provided many additional examples of serious winter fighting by Soviet cavalry—in actions below Stalingrad, in the northern Caucasus, below Valuikām, Kharkov, and in other regions. During the present (1943-44) winter Soviet cavalry has continued destroying enemy units. During these three winters of war, cavalry has accumulated much experience in offensive actions under winter conditions.

Winter Peculiarities

Winter operations by cavalry are difficult, for during this period of the year it is necessary to overcome not only obstacles created by the enemy but also those created by nature.

Deep snow provides one of the major difficulties. In places where there is little snow an offense can be carried out either by mounted or dismounted formations (depending on enemy fire) with the support of tanks. Under these conditions horse artillery can support the attack and insure its success. On the other hand, where the terrain is covered with deep snow, an offensive is possible only with dismounted formations (on skis or not), *less* the support of tanks. The deepness of the snow often dictates the directions of the main attacks, for which it is always desirable to select terrain where actions by all types of troops are possible.

Areas covered with deep snow are useful for accomplishing encircling and enveloping maneuvers. Under such conditions evidences of the approach can be hidden and the enemy surprised by sudden thrusts to his flanks and rear.

Obviously, in winter there are fewer usable roads than in summer, and although improvised "roads" can sometimes be made by direct travel between two points, in general, winter limits the maneuverability of troops by binding them to a small number of roadways.

The maneuverability of units and sub-units can be increased in winter by placing the men on skis; also, frozen rivers, swamps, and streams become passable. The advance of modern technical arms is considerably complicated by swamps, streams, and intermittent creeks, such as in the wooded and marshy regions of the Ukraine and Belorussia, which are not frozen. In areas like these there must be a well organized engineer reconnaissance over the entire region, particularly in the swamps and non-frozen areas. Experience indicates that in general the smaller reconnaissance units (with MG) on skis are the most suitable for winter action. As a rule, mounted reconnaissance formations are unable to approach the enemy secretly in winter, and for this reason they cannot fulfill reconnaissance aims.

During the period of reconnaissance, the main ele-

★Translated from Soviet Military Journal, *Voennyi Vestnik*.

Winter*

by

Major General M. Smirnov, Red Army

ments of the cavalry regiment usually hide themselves in forests, villages, and ravines, and do not reveal their presence to the enemy. This is especially important when organizing night offensives.

In either a night or day attack the line of departure should be occupied only a short period before the beginning of the attack, so that the soldiers will not have to lie in the snow for a long time. At night the line of departure must, if possible, be nearer to the enemy than in daytime so as to lessen the casualties from enemy fire. It is useful to move the troops forward via snow trenches made by front line subdivisions.

It is necessary to attack quickly and in a determined fashion. Slow, non-decisive actions are not only unwise but increase losses. The greatest success is attained by sudden attack.

Surprise—Battle for Klekotki

In December of 1941 the tank and motorized divisions of General Guderian's German Second Armored Army began to withdraw from the region of Kashirsk and move south under pressure from Soviet troops. A large motorized column was retreating on the road between Mikhailov and Bogoroditsk.

One cavalry regiment of the Nth Cavalry Division was assigned the mission of cutting the highway Mikhailov to Bogoroditsk in the vicinity of Klekotki and holding it until reinforced by other Red Army units. (See Map 1.)

At 0500 on 14 December 41 the regiment established itself on the east edge of the forest west of Klekotki. It was extremely cold and dark. The heavier weapons and technical necessities (of the regiment) had advanced with difficulty along the snow-covered roads.

Throughout the locality the scouts had learned from the local population that an enemy infantry unit and staff had arrived in vehicles at night, and that they were bivouacked in the vicinity. Also in Klekotki was a group of Red Army prisoners who were kept under guard. Reconnaissance had further ascertained that a small group of enemy soldiers with light machine guns was in the territory south of Klekotki; that an armored car was at the church, and that there were enemy patrols in the village. It was also clearly determined that the hill (estimated to be 200 meters high) northwest of Klekotki was occupied by a group (1st and 2d subdivisions) of infantry who had one machine gun near the crest. To outward appearances the enemy was quite careless, and lacked an organized guard or all around defense of outposts.

Considering all of these things, along with the fact that the somewhat demoralized enemy had been retreating, the regimental commander made an immediate decision to attack and destroy them before dawn.

Deploying the 1st and 3d Squadrons on the east edge of the forest one kilometer west of Klekotki, the regimental commander ordered:

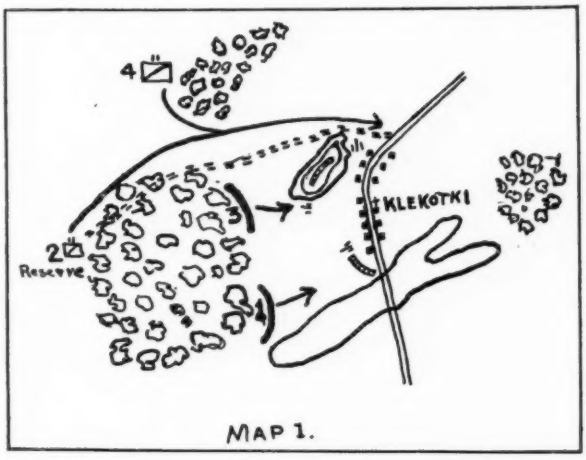
"The 1st Squadron to advance along the south edge of Klekotki, seize the southern portion of the village, and advance up the street to the church.

"The 3d Squadron to advance on the north edge of Klekotki, and then to move south along the street in the direction of the church.

The 4th Squadron, in mounted formation, to advance and seize the highway northeast of Klekotki, so as to prevent any approaching enemy units from entering Klekotki from the northeast.

"The 2d Squadron to remain in reserve, but to advance along the forest road in the general direction of Klekotki."

The 1st Squadron with a point consisting of submachine gunners, advanced east along a ravine. The submachine gunners attacked an enemy outpost on the south edge of the Klekotki and, after destroying it, entered the village and opened fire. Meanwhile, the group of automatic gunners of the 3d Squadron had



MAP 1.

beat off the enemy combat outpost at the hill, 200 to 300 meters west of Klekotki. Very shortly the attack on the village began from the south and north.

Abandoning rifles and machine guns, the Germans ran northeast along the highway where they were met and attacked by the mounted 4th Squadron. As a result many German soldiers and officers were left killed on the field. Following this the 4th Squadron, still mounted, burst into the village from the north and, after attacking a combat outpost released the Red Army men who were prisoners. Within an hour the

village of Klekotki was entirely in the hands of the cavalry regiment.

The success of this battle was a result of the following:

The enemy was careless in its failure to organize good outposts.

The reconnaissance performed stealthily was successful; the regiment quietly occupied the line of departure, and the troops were well camouflaged.

The attack was sudden and vigorous.

The well-directed 4th Squadron prevented the enemy from fleeing northeast and joining other German units.

In winter as in summer, it is important to consolidate a position immediately after driving the enemy out, to organize an all around defense, and to prepare to repulse enemy counterattacks.

Organization of Attack

Attack by a cavalry regiment under winter conditions must be preceded by early reconnaissance. In such circumstances when the regiment is moving, it must have reliable reconnaissance and security elements ahead of it on skis. The reconnaissance element must begin reconnoitering the enemy's defense system before the main body of the regiment approaches.

Preceding the main body of the regiment is the advance guard support which is reinforced by artillery and mortars on sledges and skis, sappers with land mine detectors, and other engineer equipment. Acting energetically, the advance guard support throws back the enemy and attacks his subdivisions on the flank and rear. Usually the advance guard support finds action in the vicinity of the road. Artillery and mortars then form a fire unit post near the road, and furnish fire support for the advance guard. If present and available, ski subdivisions should execute a turning movement and attack the enemy in the flank and rear.

The regiment follows the advance guard support at a distance of from 2 to 3 kilometers (1.2 to 1.8 miles) and is in complete readiness to deploy. Each squadron has technicians* attached to it; they are placed either forward or center of each squadron.

After reconnaissance of the enemy and the surrounding terrain, the regimental commander receives his mission and he then deploys his regiment for battle. Practice shows that it is least advantageous to attack frontally; the enemy should be attacked on the flanks in combination with a thrust to the rear.

Flank and Rear Attack—Battle for Golubovka

This contention is supported by the following analysis of an offense by a cavalry regiment against a well organized and defended German base. (See Map 2.)

In March 1943, after the battle along the railway line, Kursk to Ponyri, the enemy evacuated these points and began to retreat west in the direction of Sevsk. In front of the Nth Cavalry Division was the 108th Hungarian Infantry Division. The snow was so deep that it restricted movements to roads, which were in poor condition. The terrain in this region was an average cross section of land having ravines, gullies, hollows, small forests and some brush.

By reconnaissance and the interrogation of prisoners it was established that the enemy intended to retreat westward to the region of their strongpoint at Golubovka. The prisoners explained that around this strongpoint there were minefields and entrenchments, fortified by 4 to 6 rows of wire obstructions. The northern part of the village of Golubovka had been fortified more strongly than the rest of the perimeter because partisans had been raiding the garrison from the forest north of the village.

The 11th Guardist Regiment, reinforced by a dismounted squadron "Z," was assigned the mission of advancing northwest in the direction of Cherniatki, Big Berezka (these are not on Map 2), Golubovka and Lesnoe, and at 2300 on 5 March to seize the region of Lesnoe and Golubovka. Following that the regiment was to be ready to advance west to the River Desna.

At 1730 on the appointed day, the regiment departed. In front of it were reconnaissance elements and one squadron comprising the advance guard support. The remaining squadrons marched with the main body.

Reconnaissance was unable to determine the strength and disposition of the enemy. As it so happened, the advance guard support (mounted) was protected by close-in patrols as it approached the southeast edge of Golubovka, and because of the darkness these patrols failed to notice the lines of barbed wire on which were hanging empty tin cans to warn the enemy. This noise aroused the Germans who opened up with heavy rifle and machine gun fire. The advance guard support retreated, then dismounted and deployed on the north edge of Promakhovka, while the horseholders led the horses into the grove west of Dubrovka.

After going to Promakhovka to make an estimate of the situation, the regimental commander organized supplementary reconnaissance, which determined that the north and west portions of the Golubovka fortress were the strongest, while the southern side was the weakest. On the basis of this, the commander decided that his main attack would be against the southern portion (see Map 2) and issued the following orders:

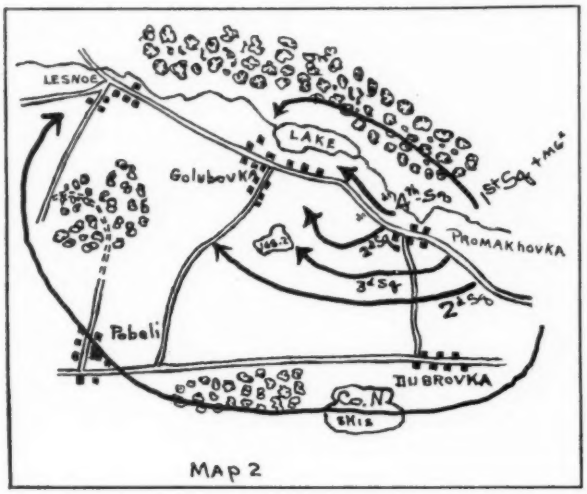
"The 4th Squadron with two light AT guns, to advance from the Promakhovka area along the road on the southeast edge of Golubovka.

"The 1st Squadron with one light AT gun and a platoon of heavy MG's, to outflank the enemy along the south edge of the grove north of Golubovka and to attack the northwest portion of this village.

*An exact translation of the Russian word. These technicians may be combat engineers, or other specialists for use in a particular phase of the contemplated operation.

"The 2d Squadron with one AT gun and a platoon of heavy MG's, to occupy the line of departure along the road at a point one kilometer south of Golubovka, and to attack the south edge of this village.

"The 3d Squadron to occupy a line of departure on



MAP 2

the eastern slopes of the Hill 168.2, and also to attack the southern portion of Golubovka.

"The attached Squadron "Z," to advance along the north edge of Hill 168.2, cut the road from Golubovka to Pobeli and prevent any enemy retreat south or southwest."

In coöperation with the regiment, Company N (on skis) detached from a rifle brigade, was to outflank the enemy through Dubrovka, occupy Lesnoe, and place a force in observation on the west edge of the village; the remainder of the company was to occupy a defensive position on the southeast edge of Znobovka and cut off any way of enemy retreat to the northwest.

The attack was to start by a signal from the regimental commander.

Not until 0500 (the following morning) did the Soviet units occupy their respective lines of departure. This delay occurred because three of the squadrons had to march through deep snow and pull their guns by hand. During the first half of the night, the enemy kept up steady fire with rifles and machine guns, but to keep their positions concealed Red Army units were prohibited from returning this fire. Near morning the enemy fire ceased. Afterwards the prisoners explained that the Germans thought an attack was being made by partisans who frequently raided from the Golubovka forest.

At dawn the regimental commander gave the signal for the artillery to open fire on enemy targets. After a ten minute barrage the artillery fire was lifted and the cavalry squadrons moved forward into the attack. Resistance on the south side was weak, and the squadrons rushed straight into the enemy's entrenchments within the village. As the Germans started to withdraw to the north in the direction of Luzhki (not on Map 2), they were attacked by the 1st Squadron. Then as they turned to the southwest in an attempt to retreat to Pobeli, they were met near Hill 168.2 by the fire of the dismounted squadron "Z." After that the Nazis began to rush about from side to side in the hope that they might escape being surrounded. Meanwhile the infantry ski company advanced along the road to Golubovka.

As a result of this coöperative attack from all directions the enemy became demoralized and began to surrender in parts. About 0800 the entire group was smashed. There were 150 Nazis killed and 250 prisoners taken. Captured trophies included 7 heavy and 9 light MG's, a mortar battery, one A.T. gun, 360 rifles, 40 horses, and ammunition an arms depot, 3 radio stations and other military property. The Red Army cavalry regiment lost 12 killed and 20 wounded.

Success in this battle was due primarily to the following:

The enemy stronghold was surrounded on all sides, and the combined attack was well organized.

Artillery and mortars played a big rôle. In spite of the bad roads and deep snow these units were able to provide their own reconnaissance, to pull guns and mortars into position, lay them, and in the morning to have suddenly opened fire on enemy targets.

The suddenness of artillery fire from short ranges contributed materially to the quick occupation of the southern portion of Golubovka village. Even after that the artillery continued in support of the attacking squadrons.

The direction chosen for the main attack was a well selected one. The plan of flanking the enemy on the north and south was also sound. Afterward, it was evident that the infantry ski company might have been better employed had it been *ordered* to advance more aggressively on Golubovka. Actually, during the course of battle the ski company commander advanced toward Golubovka on his own initiative. Because of *poor reconnaissance during the approach march toward the enemy defenses,* the regiment could easily have failed in its mission.

In conclusion, it is necessary to point out that all winter operations demand a well-organized antitank and antiaircraft defense. While it is necessary to concentrate troops in places, the artillery and mortar positions, the reserve and the command post *must* be protected by antiaircraft and machine gun fire plus that of any extra saber or rifle sections available. The weapons of the antitank defense and the regimental artillery must continually be prepared to direct fire at tanks approaching in any direction.

When the action is dismounted the horse holders must lead the animals out of the zone of effective enemy artillery and mortar fire, and hide the led horses in forests, hollows, and other places of concealment.

MOUNTED ATTACK*

by Major V. Donskoi, Red Army

Sovfoto

THE combination of mounted and dismounted actions, and quick changes between these two formations, are the principal battle activities of cavalry.

Experience has shown that when it is expedient, and the opportunity is used, a mounted cavalry can achieve outstanding success. An inappropriate mounted attack, however, can entail useless and unjustified losses; for example, a situation demanding a sudden transition from mounted to dismounted formation wherein the commander deliberately chooses to fight on horseback.

There is the widespread opinion in some foreign armies that attacks by mounted units are impracticable under the present conditions of heavy fire power, but the Red Army retains a different point of view in this matter.

This difference of opinion is explained by the fact that since the period of World War I the armies abroad have changed their cavalry into forces maneuvering on horseback but fighting on foot. Red Army horsemen, however, have been brought up in the best traditions of the old Russian Army, in the epoch of cavalry in the present war, and they have been taught to maneuver on horse before striking with mounted attack, if there is the slightest opportunity. Furthermore, Soviet cavalry was educated to the spirit of brave and audacious mounted actions during the period (of the present war) when it was impossible to organize strong defenses for the purpose of inflicting heavy losses on the enemy.

*Translated from an article which appeared in the January, 1944, issue of the Red Army military journal, *Voennyi Vestnik*. The publication is not the Soviet *cavalry* journal, and therefore is not out to champion any one arm. This journal, "Military News" or "Military Messenger," devotes only a small portion of its contents to the subject of cavalry.

A Cavalry Division In Mounted Attack

An outstanding example of a well-conducted mounted attack can be found during a cavalry division's offensive against German units near Kushchevka in 1942.

After successfully terminating a battle in his favor, the enemy had settled down for a rest in the vicinity of Kushchevka and was not taking measures to ward off a counterattack. Apparently, the enemy was expecting Soviet units to continue their retreat, and the Germans guessed that the Red Army would fall back on terrain more suitable for defense. It should be noted that the Kushchevka region is open steppe with little natural cover and therefore not favorable for a defensive position.

The commander of the cavalry division, assigned the mission of holding the enemy in check and subsequently driving him back, decided to solve this problem in a cavalry manner. All types of reconnaissance had determined the character and disposition of the enemy and his lack of an organized defensive position; the commander decided to attack the enemy with mounted formations.

Making skilful use of the enemy's carelessness, the cavalry commander marched his combined units forward to the line of departure. This movement was accomplished with stealth. Artillery, mortars, and machine guns were concentrated on the flanks of the attacking horsemen.

As the combined fire of all weapons opened up, the cavalry began its attack. This charge caught the enemy by surprise, and in short order the rapidly galloping horsemen had broken through the ranks of the confused Germans.

Supported from the rear by combined machine-gun,

mortar, and artillery fire, the mounted units pressed toward the front and against the flanks and the enemy concentration was disintegrated. As a result of this particular conflict the enemy lost not less than 1,500 men killed; all of the German matériel and equipment was captured. Cavalry losses were insignificant.

No less interesting is a mounted attack by cavalry against an Italian Alpine Corps which was routed in January 1943 near the town of Baluika. Penetrating deep in the rear, Russian cavalry units succeeded in outstripping and surrounding the retreating Italians, who were somewhat demoralized as a result of a previous battle.

Refusing to lay down their arms and surrender, the Italians decided to force their way through the ring surrounding them and then to proceed westward. Thus the battle began. The Italians moved forward immediately, but, meeting the well-organized fire of the cavalry, they were stopped.

The commander of the combined (Red Army) units had correctly evaluated the morale and condition of the enemy elements. He decided not to give them any rest, but to attack them with mounted units with a concentric blow from three sides. Artillery, mortars, and machine guns supported this attack.

Having pinned the hostile forces down by this strong fire, the cavalrymen drew their sabers and plunged into a mounted attack. The enemy, shaken at the sight of this, lost all possibility of counterattack and began to flee.

During the short period before the enemy surrendered, more than 600 Italians were killed. In all, over 10,000 Italian soldiers and officers, plus a few generals, were captured in this battle.

From the examples just given, it would be incorrect to conclude that mounted attacks by divisions are commonplace today. Such a conclusion would be wrong. The attack near Kushchevka, for instance, was not a typical one since the circumstances were extremely favorable to the attack. Such situations as a rule are very rare, for the enemy is usually more cautious.

A Cavalry Regiment In Attack

A mounted attack by a regiment, however, is not unusual. An illustration of such follows:

In November 1942 the commander of a cavalry regiment near the village of Evlampievska was ordered to attack the enemy and seize the village. Following the earlier break-through of the enemy's defenses, the action was taking place in the enemy's rear area. Soviet cavalry had managed to appear in the zone unexpectedly. The garrison in the village of Evlampievska had not prepared a defensive position. Near this village was a German aerodrome with 20 planes. Here likewise, there was no provision for an organized defense.

The general layout of the terrain favored a mounted attack. The presence of many gullies and ravines gave cover for the approach march and permitted the concentration of forces necessary to bring about a sudden attack.

The attack began after a preliminary reconnaissance had determined that a battalion of infantry with tanks was concentrated in Evlampievska, and that the enemy had no knowledge of the presence of Soviet cavalry.

Screened by a large gully, one squadron attacked the enemy on the flank, two squadrons carried out the frontal attack, while the fourth squadron—the reserve—moved to the right and back so as to follow the squadron attacking the flank.

The movement into the attack began under cover of an artillery barrage, but initially no small arms were fired. Nevertheless, the enemy was not taken by surprise. It turned out that the enemy had adapted some near-by heights to his defense, and from these he began to pour machine-gun fire on the attackers. It became obvious that these fire positions could not be suppressed by the attack then in progress.

On seeing that the enemy fire was increasing, the cavalry commander gave the signal for his units to dismount. This was carried out under cover of fire, and the dismounting was performed so quickly and efficiently that the losses proved insignificant.

The horseholders galloped the led horses into the nearest ravine, while the dismounted squadrons, continuing the attack, brought all their fire power into play.

Very shortly the enemy was forced to abandon Evlampievska and retreat.

Note that in the beginning the regimental commander was not well informed about the enemy's defenses, but upon seeing this fault he did not hesitate to improve his position by going into dismounted action.

THE SCOPE AND LIMITS OF MOUNTED ATTACKS IN MODERN WARFARE

Given the proper opportunity a mounted attack can prove successful, but the circumstances must favor such an attack; the attack must be supported by all cavalry weapons.

The combination of cavalry with tanks produces the most successful "mounted attack"; there should be very little gap between the tank and horse elements in such an attack.

Enemy aircraft is a serious hinderance to mounted pursuit.

A retreating enemy provides one of the best targets for mounted attack.

Accounts of actions by Red Army cavalry present a successful argument to support the contention that mounted attacks have a place in the warfare of this era.

When a mounted attack is not plausible, a smart commander dismounts his troops, sends his led horses to a place of safety, and attacks as infantry. Led horses are then quickly available for rapid pursuit and annihilation of the enemy as soon as a breakthrough is indicated.

Sovfoto

Pursuit

Mounted attacks are extremely successful against an enemy who is retreating. In 1943 many such mounted attacks occurred in the south after the destruction of the enemy at Taganrog. The retreating enemy, clinging to every fortification and height favorable for defense, held onto these points for a certain time, but eventually relinquished them to retreat westward in his vehicles. The cavalry, learning these enemy habits, applied the following tactics of attack: not more than half of a unit body was dismounted, and attacked either the enemy's recently improvised flanks or junctions between his defenses, while the remaining cavalry, in complete readiness for mounted action, was disposed in hiding.

When the enemy's fire began to weaken in the course of a battle, the cavalry commander, supported by all of his fire power, led into action those subdivisions which had been in hiding and awaiting the signal for mounted attack. As a rule, the enemy never had time to withdraw and either surrendered in the field or was annihilated.

Then the cavalrymen, following their reconnaissance, galloped to the next line of defense. Approaching close to the enemy, they dismounted, and pressed on as infantry. When the enemy prepared to retreat, the cavalry unit mounted up and again attacked on horse.

Enemy aircraft is one of the more serious hinderances to cavalry operations during the period of pursuit. However, cavalry is taught to oppose it. Besides taking active measures to ward off enemy aircraft the cavalry makes use of the terrain and near-by objects to camouflage its presence.

Conclusion

From all narratives, it is evident that mounted attacks have not lost their significance, and that they can produce good results if the cavalry is operated in conformity with these modes of action. *Mounted attacks can only be undertaken when the circumstances are favorable, and then it is obligatory that every cavalry weapon supports the attack with heavy fire.*

The combination of cavalry and tanks produces the most effective mounted attack. In such an offensive it is usually the practice to send the tanks forward first as a means of crushing the enemy's fire positions; this is done after the artillery and mortar barrage. The distance between the tanks and the attacking horse formation must be held to a minimum so as not to give the enemy the slightest pause in which to recover and cut off the horsemen from their tanks by fire.

When it is impossible to continue the attack mounted, the best method of sustaining the initial offensive is to dismount and fight on foot. During this phase, however, even when the attack is progressing in his favor, the commander of the dismounted elements must not forget that he can and must finish off the enemy with a mounted blow. When conducting such an action, therefore, the commander is obliged to remember his horseholders in time to bring them forward so that he can mount up and quickly go into action either in pursuit, or to deal a last paralyzing blow at the scattered enemy ranks.

Raid of a Cavalry Squadron*

by Lieutenant Colonel F. Voloshin

THE Polesie area, consisting largely of swamps, has very poor roads. The marshes, stretching along the Belorussian rivers, form a serious obstacle to maneuver and movement of troops. In getting from one village to another, not more than about two miles apart in a straight line, it is often necessary to cover from 9 to 12 miles in a roundabout way.

Lieutenant Foma Tkachenko's squadron of cavalry was stationed in the village of Kozlovka on the bank of the river Berezina. Beyond the dense forest, which surrounded the village, the meadows and soggy swamps were broken by several lakes and intersected from east to west by the small Rudynaka River. The cavalry squadron was to capture the small village of Cherniye located on the important highway three miles from Kozlovka, but between these points was the deep spongy bog of Kachai.

Local inhabitants told the cavalrymen of various people who had been lost in the Kachai quagmire. Only last year it had claimed to Hitlerites who were trying to track down a partisan, and 5 years ago a village hunter had fallen victim to its treacherous but seemingly solid surface.

The problem of crossing the marshes greatly disturbed the lieutenant. The brushwood road leading around it was about 11 miles long, and there was no time to lose. Moreover, the road was heavily guarded by Germans, so Tkachenko decided to try to cross Kachai swamp.

With the aid of wide wooden skis, 4 Red Army men, led by a junior lieutenant, went out reconnoitering. An hour and a half later they returned with the discouraging report that Kachai swamp was impassable. The fetid morass was as much as 8 feet deep, and scattered throughout were "windows"—deep, treacherous wells covered with a tenacious growth.

The cavalrymen pondered the situation. This was not the first time that they had found themselves faced with difficulties. Many times since the beginning of the war they had been in dilemmas, but they had always found a solution. Lieutenant Tkachenko studied the map and measured the distance.

The small river of Rudyanka connected the Kozlovka area with Cherniye Brody. *The cavalrymen would swim to their destination!* When the sun went down beyond the forest and a mist settled over the swamp and river, Tkachenko ordered his men to undress, tie their clothes to saddles on their horses, and enter the water. With each cavalryman holding the reins with one hand and paddling with the other, they swam by the side of their horses against the current.

Under cover of darkness the cavalrymen covered about two miles and emerged on the bank not far from the outskirts of Cherniye Brody. After making their way through orchards and gardens into the village, they attacked in dismounted formation and caught the Hitlerites unawares. The entire enemy garrison was wiped out and two artillery batteries captured.

A cavalry unit on the Southwestern front is seen swimming a river to the enemy shore. Germans have been often surprised by the sudden appearance of Cossacks at unexpected points.

*By cable to THE CAVALRY JOURNAL, from War Department, U.S.S.R., Moscow, July, 1944.

Basic Military Facts Cof

Thorough and complete basic training for the individual and for small units.

Offensive spirit and eagerness to close with and destroy the enemy.

Leadership.

Teamwork and coördination in the employment of combined arms.

Physical fitness.

Battlefield technique. All movement on the battlefield is necessarily slow and deliberate.

IN all reports of battle experience the soundness of our tactical doctrines prescribed in War Department training literature has been confirmed. Failures or tactical reverses have resulted from disregard or misapplication of these principles or from lack of judgment and flexibility in their application.

In general the experiences of all commanders may be summed up in the words of one commander who said: ". . . it appeared significant that when principles taught in Field Manuals were followed, good results were achieved, and deviations brought trouble."

The following points are stressed with monotonous regularity—

First: Thorough and complete basic training for the individual and for small units. The training of an efficient military organization is not unlike the training of an athletic team. The prime requisites of each are: first, individual proficiency, and secondly, team play. This includes thorough discipline and training in other basic subjects such as scouting and patrolling, dispersion, camouflage, sanitation, and so forth, but above all, the expert use of individual weapons and perfect team work as part of the crew, squad, and platoon.

Second: Development of the offensive spirit and eagerness to close with and destroy the enemy. A man becomes a good soldier only when he places his duty above his personal safety. This is one of the imponderables, as *no one* can be sure how he will react to combat. It may be assumed, however, that troops will fight as they are trained and led. It is always necessary to inculcate a disciplined fighting spirit and a realization that a price must be paid for success in battle.

If possible, untried units should be eased into their first fight. This will lessen their initial shock of battle and give them confidence. Some units who suffer heavy casualties initially do not recover for a long time. Likewise, replacements should not be rushed into battle. They should be brought in during a rest period and given opportunity to get acquainted, particularly with their teammates and leaders.

Men become tired and battle weary, and this must be recognized and watched. This condition comes earlier to some men than to others, depending largely upon the man's physical condition, training and character—but it comes eventually to all men. Battle fatigue seriously affects combat efficiency and when it becomes prevalent in a unit, then it is better to introduce fresh, eager soldiers, although less experienced.

Third: Leadership. Leadership is a natural gift. Some men have it to a very high degree, and their fellows will follow them practically anywhere, while others do not have it at all. Therefore, the placing of the right men in positions of leadership is the most important safeguard for success in battle.

It is a function of command to select and place the natural leaders in positions requiring their priceless tal-

ofirmed on Battlefields

ents and to utilize the others on appropriate staff or administrative assignments out of close contact with the men. In addition to selecting the leaders, it is necessary to earmark and train their logical battle replacements. A military unit works on the same principle as any championship team. Not only must each man know his job, but there must be perfect teamwork and there must be good substitutes available when replacements are needed. Leadership is a question of life or death to the man in ranks. The weak leader must be replaced promptly or the reaction will go down to the last man and the unit will fail miserably in battle.

The chain of command functions well in military organization and, except in emergency, should not be violated, not even on the battlefield. Generals and colonels leading platoons under fire make good copy for war correspondents but, although such acts may win medals they seldom contribute anything worthwhile to final victory.

Success in combat demands the subordination of the individual to the accomplishment of the team or group mission. Teamwork is based on the belief that the team task *can* be accomplished, the knowledge that the leadership *is* competent, and the confidence that each member of the team *will* perform his share of the assigned task.

Our officers as well as our soldiers must know and perform their assigned tasks in combat and none must jeopardize the victory by free lance operations, however heroic these may appear at the time.

Fourth: Development of teamwork and coördination in the employment of the combined arms. Close and effective coördination between the infantry-tank-artillery team is an essential requirement for success in battle. None can do the job alone. None should try. The infantry must not expect the artillery or the tanks to annihilate the enemy; neither should the infantry be committed without the close support of every available tank and artillery piece.

The artilleryman fights effectively from a position well behind the line of contact; the tanker fights behind several inches of very fine steel, but the hairy chest of the infantryman is protected only by his OD shirt. Coördinated team play between these three musketeers of the modern battlefield requires careful training and mutual appreciation. First of all, they each require reliable and instant intercommunication. The artillery must pave the way by smothering the hostile artillery and drive the opposition to cover; the infantry must take out the antitank guns, and the tanks must help take out the enemy infantry and their automatic weapons. It must be a fixed rule and a point of honor that neither tanks nor tank destroyers will permit their infantry to be overrun by hostile armor, no matter what it costs to themselves. This is the rôle of the infantry-tank-artillery team. This team play will engender mutual respect and comradeship on the battlefield which is essential to victory.

Fifth: Physical fitness. The American Army ranks high in physical fitness. Each man must further prepare himself individually according to his job and according to his age. This does not contemplate the spectacle of middle-aged high ranking officers running across country or otherwise competing physically with vigorous young men. The probable injury to health and the resulting loss of experienced leadership is not warranted by the results to be achieved. Each man, however, must prepare himself to go without sleep, to withstand the worry and responsibility of battle, and to remain calm and fit.

The infantry soldier above all others must be developed into a rugged individual. He must be accustomed to long marches with full pack, up hill and down, so that he can carry a burden, withstand fatigue and exposure in cold and wet weather, go several days without hot food or sleep—all this and more without getting sick and still retain his combat effectiveness.

Sixth: Battlefield technique. All movement on the battlefield is necessarily slow and deliberate. Our training problems too often convey faulty concepts by encouraging grandstand moves and by rushing through situations in a few short hours that would require days and nights of heroic struggle in battle. This is probably the most unrealistic feature of an otherwise fine training program, and the one most difficult to correct. Time can be saved by forethought and preplanning, by rapid decisions, and by being prepared for any emergency. The mark of a battle-wise unit is the deliberate and assured way it prepares for battle, checking on every detail and making certain that everything is set and ready for any contingency.

An objective in battle is usually won in the first try, or it is not going to be won at all with the initial set up. Failure initially may indicate the need for a greater concentration or more thorough coördination of artillery or tanks, or exceptionally the commitment of a fresh assault unit under a better leader. Most attacks that fail, do so because they were not coördinated fully. The urgency of the situation may justify a piecemeal attack, but whenever possible, adequate time must be allowed for coördination to include small units.

The author has interviewed many senior commanders and observers overseas as well as studied the mass of combat reports and recommendations submitted from all battlefronts.

MUSTS FOR RECONNAISSANCE LEADERS

by Lieutenant Colonel Leo W. Mortenson, Cavalry

Alertness.

The keynote to successful reconnaissance (as well as to personal survival in combat) is constant, studied alertness by every man involved in a reconnaissance mission. No member of a reconnaissance unit can ever afford to relax his attentiveness, his awareness of the immediate situation, or the keenness of his observation, while engaged in his specialty.

Aggressiveness.

When confronted with an impasse or an unknown situation full of danger, *do something*. Don't be foolhardy and employ the bull-in-the-china-shop solution. (Reconnaissance units don't make line bucks.)

Seize the initiative and employ every element of available force to gain the needed information about the enemy or to avoid him and continue on your way.

Don't be timid. Take calculated risks, but always remember that in reconnaissance it is the end run that pays and not the power play through the line.

Battle Play.

Develop your battle play in your own vehicle, team, platoon, or troop. SOP for all contingencies that can be foreseen will relieve the necessity of having to plan details in a crisis when there is no time to lose.

Study the recently issued Cavalry School manual, "Battle Drill." Adopt its formations, or adapt them to the particular circumstances.

Three Teams.

Be a *three team* platoon leader. Many platoon leaders attempt to solve a situation by the use of their lead team only, or waste precious time in slow, tedious personal reconnaissance while two other complete teams remain idle, often without even having been informed of the situation. There is always more than one thing to do, more than one direction to be searched. Don't hesitate to employ your teams on separate missions. When the lead team is stopped, make it SOP to seek the hostile flanks with the other two or to find that bypass which almost always exists.

Reserves.

It is normal to hold a portion of the reconnaissance force initially as a *reserve*, although this procedure is not obligatory for formations smaller than a troop. Usually this reserve amounts to one-third of a reconnaissance command—a team for a platoon, a platoon for a troop, a troop for a squadron. Many commanders seem to have the idea that the reserve has the sole function of providing security for the CP and, therefore, hang onto it desperately until all forward reconnaissance elements are hopelessly bogged down. This is a fatal mistake.

Use that reserve!

The purpose of any reserve is to influence the action at the decisive moment, to *win the crisis*. So don't hoard it but when the forward reconnaissance elements are stopped or slowed down to a snail's pace, without hesitation *commit the reserve* to assist in forcing patrols through, to intensify the reconnaissance, or to renew it in another direction. There is no value in having a reserve follow the CP around interminably the way the tail follows the dog. If necessary, constitute CP security from among troop mechanics, clerks, and cooks until some combat element can be withdrawn from the front to form a *new reserve*.

Be alert.

Roads.

Utilize *roads for movement* until hostile contact becomes imminent. Then wherever and whenever the terrain allows, *move off roads*—keeping under observation at all times the road which is your axis.

For wheeled vehicles, cross-country travel is slow, damaging, and treacherous, so use those roads whenever the situation permits.

Move by bounds.

Cover that "lead bug" when it dashes forward. Send it to a definite spot and before the "bug" darts out of its cover, point that 37 on the selected spot or on the most suspicious piece of terrain.

Each bound has for an objective a point of observation or a spot beyond which the lead vehicle can no longer be protected. A point of observation may be a hill, a crossroad, a tree line, the entrance to a defile, the near side of a bridge, a bend in the road. Cover them all. If necessary, dispatch both bugs of a team or two teams of a platoon if the distance from the axis of march warrants.

Be aggressive.

Neglect no vantage point for observation to the front or the flanks, and move from vantage point to vantage point by *bounds.*

Terrain.

Learn to appreciate terrain. Never fail to investigate cautiously and thoroughly the piece of ground, the patch of woods, the ravine, that may harbor an ambush. Never pass a hill, a crest, or any commanding ground that affords a vista of observation without taking advantage of it. Either make a personal observation or dispatch a team, a vehicle, or a scout to observe. Make this so habitual as to become instinctive.

March Outposts.

When halted, establish march outposts. At all halts,

Use your reserve.

especially at phase lines, provide all around security and observation. In other words, move something (even if just a dismounted trooper) one bound in each direction from your command car—front, right, left, and rear.

Phase Lines.

Limited objectives are specified in order to effect lateral coördination between units in movement. Usually they apply only to the forward elements in an advance or to the rear elements in a withdrawal and do not affect the movement of CPs or reserves.

Choose phase lines for the following characteristics:

1. The distance between phase lines must conform with the desired rate of advance.
2. Phase lines should connect terrain features readily recognizable both on the map and on the ground, or should consist of a feature such as a highway, a stream line, a railroad, or an imaginary line connecting a series of road junctions, cross roads, villages, ridge lines, etc.
3. They should be on the forward side of features, the possession of which would be of advantage, such as rivers, ridge lines, lateral roads, or the far ends of defiles.

SOP for patrols upon arriving at phase lines is:

1. Effect lateral contact (only if time permits or the situation demands).
2. Establish march outposts and OPs.
3. Cross to continue reconnaissance at the indicated hour unless specifically directed to the contrary.
4. Use the halt at a phase line to plan the movement to the next phase line and inform all members of the patrol of the details of that movement.
5. Make a thorough check of all administrative de-

Investigate.

tails such as fuel and ammunition, of supply and condition of all vehicles of the patrol.

Defiles.

Secure the exits of defiles before committing your unit. Once your main force has entered a defile you are fixed to the road and powerless to maneuver to fight, or sideslip to escape. If the defile is a bridge, prepare to cover the far bank with fire, and then send your scouts forward on foot to determine if it is passable. If it is not mined and will carry your vehicles, send the scouts, either mounted or dismounted, to the other side to discover an ambush or a lurking enemy.

Mere road reconnaissance is not enough to insure a fair degree of safety. Only when you receive the "all clear" from your forward scouts can you prudently send your main body across. If the defile lies between two hills or embankments, push your scouts through to the far end first and secure the exit before entering with your main body. When assured that all is clear, have your main body move rapidly through.

If the defile is continuous for many miles, as a passage through a forest, you will have to enter it before your scouts clear the far exit. In this case, do not close on your scouts but move rapidly by bounds from one vantage point to another in their rear. Maintain contact by radio or visual signal with them throughout.

Lateral Reconnaissance.

Don't neglect lateral reconnaissance. Cover the roads and trails, and investigate to the limit of your resources all suspicious or advantageous terrain features in your assigned zone. Upon arrival at phase lines make contact with the units on your flanks if time permits and lateral routes are accessible. The extent of lateral reconnaissance depends upon the rate of reconnaissance, the road net, the breadth of assigned zones, and the mission in general.

Send messengers.

Use map, compass, odometer and common sense.

Messengers.

When radio fails, do not wait indefinitely for radio contact to be reëstablished. Use messengers. Brief your messenger carefully before dispatching him and be sure that he has a map, knows his location and destination, and is familiar with the general contents of his message. When there is extreme danger of your messenger being intercepted, send an alternate messenger by a different route. Get that information back immediately by any means available.

Location.

Coördinate these four: your map, your odometer, your compass, and your common sense. There have been far too many instances of teams, platoons, and even higher echelons, becoming lost and wandering in circles, accomplishing nothing.

Seize the initiative.

Develop your sense of direction, orientation, and distance; read your map accurately; but put your faith in your odometer and your compass. If you do get lost, don't lead your entire team or platoon on a wild goose chase but stop where you are, get under cover, and send vehicles or scouts in several directions to find landmarks.

Know where you are at all times. Constantly compare your map with your odometer and with terrain features, but bear always in mind that no map is absolutely without error. No single feature of reconnaissance is more important than this: *Every man of a reconnaissance unit must know his location at all times.*

Axis of Advance.

Reconnoiter thoroughly your assigned axis or route of advance. When your axis, however, is blocked either by enemy or terrain obstacles, report the cimcumstances, and leave it temporarily in order to bypass and continue on your mission.

If the enemy denies advance along your axis and forces you to leave it, do not abandon it completely but leave a portion of your force in contact unless you are relieved of such responsibility by your higher headquarters. Always, when you leave your assigned axis, return to it as soon as conditions will allow, and always report your action.

When the accomplishment of your mission conflicts with advance along your axis, your mission wins.

Contact.

Once gained, contact is maintained at all costs, but this applies only to the contact you have been dispatched to establish.

Don't fritter away your force and don't waste valuable time in an attempt to maintain contact with every trifling little hostile patrol you encounter. Save your strength to gain and maintain contact with the specific enemy *your mission* requires you to locate. Then hang on like a bull dog with every means at your disposal and report every shred of information you can uncover about it—its composition, strength, attitude (whether it wants to fight, sit tight, or whatever), its location, its flanks, *everything* about it.

Let your mission be your guide and when it requires you to maintain contact, be a leech, but elude those small enemy patrols and keep them guessing.

Orders.

Make your orders *clear, concise, complete.* In issuing orders make the following SOP.

1. Follow implicitly the Five Paragraph Form.
2. Delete all extraneous matter without specific application to your own mission and your own immediate situation.
3. Do not repeat instructions that are matters of SOP or of elementary training.
4. Plot as much as you can on your map and place that map where it can be seen plainly and its information copied easily by those who receive your orders.
5. Do not attempt to issue definite instructions covering a situation that is vague or distant in space or time or that is contingent upon an undetermined chain of circumstances.
6. Insure that in substance your orders penetrate to every man in your command and that every man knows exactly his place and his part.
7. Question your subordinates upon the context of the order, particularly that portion which applies specifically to each one of them.
8. Leave no room for misunderstanding. Do not issue an order that can merely be understood; issue one that cannot be *misunderstood.*

In any doubtful situation, *seize the initiative!*

Report your actions.

REALISTIC RECONNAISSANCE

ONE big reconnaissance lesson which a careful reading of reports from many battle-seasoned American intelligence officers emphasizes is that the great similarity of mistakes, errors in observation and judgment which have been repeated in one action after another, gives positive indication of *faulty collection and relay of vital information.* This fault can and must be eliminated by thorough practical training previous to actual combat.

Reconnaissance personnel must somehow be trained to observe accurately and to relate both accurately and swiftly, just what they see and hear. Their minds must be made to register camera sharp pictures of what lies before them, or of what may be concealed from sight. They must be drilled by *incessant practice* to absorb details of a developing combat situation quickly, but not so fast that important facts are overlooked in the process. Finally, they must forever be warned that speed in sending that information back is absolutely essential.

It is well known that when several eyewitnesses are permitted to view a sudden, distracting or startling event, subsequent interrogation will produce as many versions of the event as there were eyewitnesses to it. The fact remains, however, that the purely factual data obtained from verbal or written reports of these several observers is basically identical when stripped of the qualifying phrases used in the different accounts—phrases which cloud the true significance of what happened—a dangerous business on reconnaissance.

The important thing is to train reconnaissance men to relate accurately what they observe. There must be no mistaking haystacks for tanks or towed trailers for artillery pieces. Overseas combat commanders report that these common mistakes have occurred repeatedly, and they urge thorough and practical training now, on this side of the water, before additional units going into battle pull the same "boners."

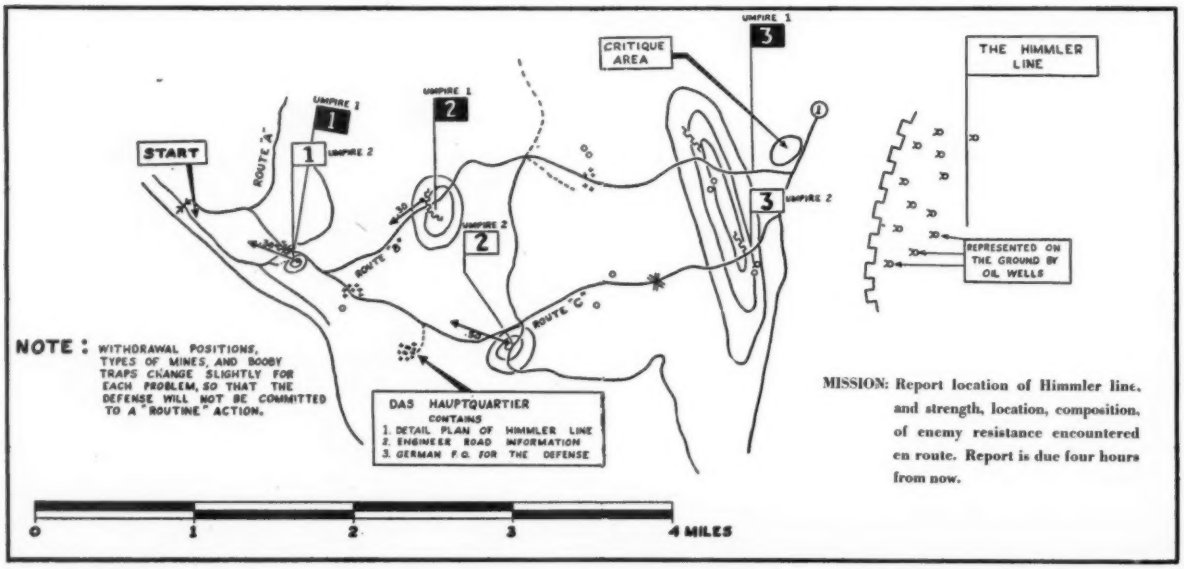
There is no doubt about the vital need for additional reconnaissance instruction through well-planned situation classes and exercises. A command in the field that does not have swift, capable and dependable reconnaissance is habitually hampered and forced to grope blindly in ignorance of the true tactical situation. At best, its commander may be forgiven for halting at a given place, but lack of information does not excuse him in the Army's view, for he is guilty of that unpardonable military sin, "inertia."

How can this purpose be accomplished? One answer lies in the establishment during training of a practical observation post course—the setting up of realistic, complicated and combat-tested situations designed to test intelligence and reconnaissance platoons and cavalry troops in time-limit zone reconnaissance, both day and night.

The intelligence section of a division can meet this need for additional scout training by staging a series of close-in zone reconnaissance problems.

One recent problem was a four-hour, four-mile zone reconnaissance, which six division intelligence and reconnaissance units and four troops of mechanized cavalry tackled during a 10-day period. In separate day and night actions, the men, going through mine fields and over mined and booby-trapped roads, bridges and by-passes, met tough opposition from an "enemy" clad in the authentic field-gray Nazi uniform.

Snipers and machine gunners had to be liquidated, mines buried under roadways and by-passes disarmed and removed, and road blocks by-passed or demolished. Meanwhile, a constant stream of enemy intelligence


START
ROUTE A
ROUTE B
ROUTE C
UMPIRE 1
UMPIRE 2
CRITIQUE AREA
THE HIMMLER LINE
REPRESENTED ON THE GROUND BY OIL WELLS
NOTE: WITHDRAWAL POSITIONS, TYPES OF MINES, AND BOOBY TRAPS CHANGE SLIGHTLY FOR EACH PROBLEM, SO THAT THE DEFENSE WILL NOT BE COMMITTED TO A "ROUTINE" ACTION.
DAS HAUPTQUARTIER
CONTAINS
1. DETAIL PLAN OF HIMMLER LINE
2. ENGINEER ROAD INFORMATION
3. GERMAN P.O. FOR THE DEFENSE
MISSION: Report location of Himmler line, and strength, location, composition, of enemy resistance encountered en route. Report is due four hours from now.
0
1
2
3
4 MILES

NCE TRAINING

by Captain H. V. Douglas

was kept flowing back to S-2's by radio. Umpires in radio equipped ¼-ton trucks kept a complete record of all transmissions. These umpires had complete control of the problem at all delaying points and unit intelligence officers followed the individual platoon and troop commanders in half-tracks as they forged ahead in the developing action. Putting the S-2 well up front is far from normal procedure, but in this case he was given a forward position so that he could get a better understanding of the capabilities of his agency.

One important feature of the instruction problem was that all S-2 section records, situation maps, journals and work sheets, were kept by enlisted men. This permitted each intelligence officer to check accurately his particular responsibility. The S-2 officer of a participating combat command likewise was on hand to check incoming reports from the field.

Officers of the engineer platoon, which simulated the enemy in the continuing problems, reported on the technical and tactical mistakes that each unit had made, and at the conclusion of the problem, the ability of each unit's reconnaissance was determined by the amount of accurate information which it had sent back to its S-2 section.

The mission was based upon studies of actual situations calling for aggressive close-in reconnaissance by U. S. forces in the Italian theater. No written material, "canned messages," or "assumed" conditions were employed. Various types of fire power were represented by blank ammunition and pyrotechnics. Credit for eliminating fire from a position was denoted by the firing of explosives in that position at the proper time, and live "smoke" mines and booby traps were used extensively. Flares were employed during night phases.

The problem situation presupposed a German infantry regiment and battalion of field artillery in position to protect the "Himmler" line of oil wells. In a previous battle, the main "Nazi" army had been defeated and, now in full retreat to the north, had left behind "suicide" units to carry on a delaying action. The mission was to make a complete reconnaissance of the intervening four-mile zone and report back to G-2 the strength, composition and location of enemy elements encountered, so that contact with the main Nazi force could be reëstablished.

Realism was emphasized throughout the problem. Casualties were promptly eliminated from the action and vehicles which were disabled by mines were "winched" out to preserve the tactical situation. One unit even lost the vehicle in which its communication radio was installed.

A novel test of initiative came midway through the terrain when advancing intelligence and reconnaissance

Members of a reconnaissance unit probe a short defile which cannot be by-passed during realistic training.

platoons stopped to investigate a well booby-trapped cabin, complete in setting even to Hitler's picture hanging on the wall. On a table in the center of the cabin was a Nazi military folder containing among other documents a scaled map of the oil field objective and a German field order containing three defensive plans.

Anyone attempting to pick up this folder would set off the booby trap, but resourceful reconnaissance men solved this dilemma by pulling the document from the loose-leaf folder. Upon comparison with a panoramic sketch of the German oil field stronghold, the map proved to be an accurate one and the unit whose men took the trouble to verify and amplify their reconnaissance in this manner received high rating in the test.

Flagrant violations of basic reconnaissance principles were not tolerated. In such cases, the unit participating was halted and required to start the course again from the beginning. During one problem 15 men went to work on a mine field without first eliminating enemy snipers on a dominating hill 50 yards to their front. The snipers opened fire and all 15 men were designated as casualties. Since this was too gross an error merely to mention at a critique, the men were required to retrace their steps and do the job properly. They did.

Excerpts from umpires' reports indicate clearly in just what phase of reconnaissance the various units needed additional training. "Began work on mine field without knocking out snipers,"—"Not impressed with necessity of being watchful for enemy antipersonnel devices"—such were the remarks passed on to the men involved.

In the belief that reconnaissance personnel should know what becomes of their information after it is transmitted by radio to the rear, they were permitted to inspect S-2 journals and work sheets at the critique held after each problem. Round-table discussions led by umpires and participated in by the men of the intelligence and reconnaissance units served to clarify the subject and to remove reconnaissance reports from the realm of mystery to matter-of-fact news gathering.

THE TANK COVERING D

FRONTAL security for armored units in motion is provided by an advance guard or a covering detachment. The advance guard secures the front of a unit moving in march column along roads, while the covering detachment protects the unit's front as it moves in approach march formation, usually cross-country when contact is imminent or has been gained. The actions of a covering detachment are comparable to those of the scouts in the infantry rifle platoon.

Mission

The covering detachment provides frontal security for a larger unit by observation, attack, defense, or any combination of these methods. The primary mission is that of security; the secondary mission is reconnaissance.

Specifically the duties of a covering detachment are to:

(1) Guard the main body from frontal surprise, and obtain information by observing to the front and flanks.

(2) Push aside small enemy patrols, outposts, or detachments, and offer resistance to larger forces until the main body attacks.

(3) Guide the main body over the best terrain available.

(4) Provide the unit being covered with battle reconnaissance by determining the disposition of the enemy.

(5) Develop the situation.

(6) Provide protection for the main body commander in his personal reconnaissance of the forward area.

(7) Cover a larger force in the approach to the line of departure.

(8) Support the main body in the attack, when it (the covering detachment) is sufficiently strong.

Use

The covering detachment may be used:

(1) In the advance from the assembly area to the attack position.

(2) From the attack position to the line of departure.

(3) Beyond the line of departure, in unusual cases when the situation is undeveloped, and the unit commander desires frontal security and more battlefield reconnaissance before committing his unit.

(4) In any attack over previously unreconnoitered terrain as would be the case in a pursuit, unplanned flanking maneuver, or hasty attack.

Composition

The covering detachment will ordinarily come from the unit whose movement to the objective is being covered. It is rarely reinforced except for reconnaissance vehicles, but it is normally supported by assault gun and mortar fire from the head of the main body.

The size of the covering detachment will vary with the size of the unit protected, the terrain, and the frontage desired developed. Normally, the covering detachment of a tank platoon will be from one tank to one tank section; of a company, one section to one platoon; of a battalion, one to two platoons; of a combat command, two platoons to one company.

Because of their mobility, light tanks are specially suited for this work.

Communication and Control

Communication and control between the main body and the covering detachment are normally maintained by radio, tanks, and ¼-ton trucks.

The commander of the unit being covered, from a position between the covering detachment and the main body, controls the direction and speed of the entire covering detachment, by prescribing limits (terrain objectives) of bounds to be made. (Sketch A.)

When the commander of the main body issues his order that paragraph pertaining to the covering detachment should contain the following information:

(1) The general route to be taken.
(2) The frontage to be covered.
(3) The limit (terrain objective) of the first bound, and tentative subsequent bounds when practicable.
(4) Tentative orders for the conduct of the covering detachment when its mission is completed.

Communication and control are normally maintained within the covering detachment by the use of radio, flag signals, and, occasionally, ¼-ton trucks.

The covering detachment commander also prescribes limits of intermediate bounds to be made by the covering detachment. (Sketch A.)

Operation

Using line formation with 100–300 yards between tanks, the covering detachment moves forward as a unit within limits of the intermediate bounds set up by the covering detachment commander. (Sketch B.)

Each tank, moving forward in its respective zone and taking advantage of cover and concealment, ex-

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★Formerly with 1st Armored Division, North Africa.

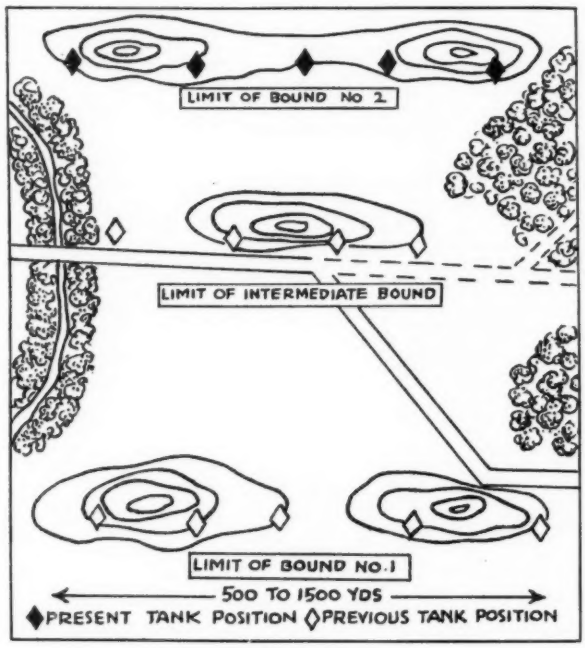
G DETACHMENT

by Captain William M. Delaney, Cavalry*

amines suspected localities, and searches its entire zone by observation and reconnaissance by fire. (Sketch B.)

When the covering detachment meets resistance on any section of the front covered, it is supported by *fire* and *limited maneuver* of nearby tanks. Should the enemy be too strong for the tanks in that area to overcome, the covering detachment commander calls for supporting fire to neutralize the position, while the tanks *in that sector* maneuver to destroy it. For this purpose, the assault gun and mortar platoons are normally placed at the head of the approach march column.

If the resistance is still too strong, the tanks affected may be ordered to contain the enemy in that area, to withdraw, or to bypass the resistance.



Sketch A
Bounds of the Covering Detachment

The covering detachment commander at all times attempts to sweep and probe the entire area to the limit of the bound prescribed by the main body commander. When resistance is met on the right flank, the center and left flank continue to advance. When casualties occur, each vehicle takes on additional frontage. If a position is ordered by-passed, the entire frontage is resumed as soon as possible. Only by this method can the main body commander receive a clear picture of enemy dispositions upon which to base his attack.

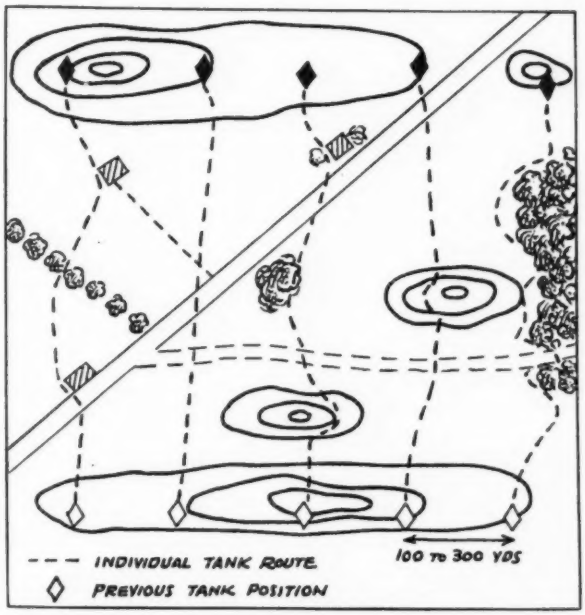
Upon arrival at the forward limit of each bound, the covering detachment takes cover, reports pertinent terrain or enemy information, observes to the front and flanks, reorganizes, picks tentative routes for the next bound, and awaits orders to move forward.

The main body guides upon and follows the covering detachment. Based upon the information passed back, it follows the best terrain, by-passes, or attacks small enemy groups not cleared by the covering detachment, and, in most cases, attacks through the covering detachment when the enemy positions are fixed. The distance at which it follows depends upon available frontal cover. Normally this distance is from 500-1,000 yards.

When its mission has been accomplished, the covering detachment may furnish flank and rear security, follow in reserve, or, if exceptionally strong (medium tanks), may constitute the assault or support wave in the attack.

Training

In order to employ a covering detachment successfully, prior training in control and selection of individual routes must be given to the troops. Such flag signals as *"all clear"* (green flag), *"enemy in sight"* (red flag), and *"out of action"* (orange flag) help in the former. The latter, selection of individual routes, takes considerable time in terrain study and teamwork. Without this training, the covering detachment will move so slowly that it will be unable to fulfill its mission—namely, to enable the unit to advance safely and quickly over doubtful terrain without deploying until sufficient resistance is encountered.



Sketch B
Individual Tank Routes in the Covering Detachment

"TELL THEM WHY"

The following S.O.P., designed and effectively employed in an armored division, prescribes an efficient, thoroughly organized Orientation Program.

THE mission of army orientation is "to create and maintain in every officer and enlisted man a feeling of individual responsibility for participation in the war, and to strengthen his efficiency as a soldier by increasing his understanding as to why we fight." A properly conducted orientation program should keep the soldier informed of the course of the war and news of the world, and give him an opportunity to add to his effectiveness through off-duty study, either individual or group.

The feeling of personal responsibility for participation in the war is developed by making clear to the individual his place in "the big picture"—the *importance of his job to his squad*, and its relationship to the mission of the unit, the division, and the army. The soldier must understand exactly the manner in which the mission of the armed forces—"utter defeat of the war machines of Germany and Japan"—is vital to him, his home, his family, and his personal interests, both now and in the future.

The Orientation Hour

Conduct.

A meeting by the company commanders should be conducted for a minimum of one undivided hour weekly, both in garrison and in the field. Where tactical circumstances make it impracticable to assemble the company, the discussion may be conducted by platoon or squad leaders.

Procedure.

The lecture method should be avoided, a conference system developed in such a way as to afford the greatest possible opportunity for maximum participation on the part of all personnel.

Conditions.

a. Informality. Smoking should be allowed if possible. The orientation hour is the men's hour—for their benefit and participation.
b. Visibility: Informality should be stressed, but it must not be forgotten that good visibility is imperative. The room should be cool and well lighted.
c. Visual aids. Maximum use should be made of maps, both in garrison and in the field. These should be of such scale as to be clearly visible to all participants. Other visual aids will include blackboards and charts, when available.
d. Seclusion. Outdoor discussions should be in secluded positions, in the shade if possible, away from traffic and other distracting influences.

Subjects

General.

a. Know why we fight. (See Fact Sheets 1, 6, 7, 8, 14, 16, 22, 24. Fact Sheets are issued in Orientation Kits by Information and Education Division, A.S.F.)
b. Know the enemy. (See Fact Sheets 2, 7, 9, 17, 18, 25.)
c. Know our allies. (See Fact Sheets 3, 7, 10, 27, 28.)
d. Know the news and its significance. (See Fact sheets 5, 7, 12, 15, 23, 26.)
e. Know and have pride in outfit. (See Fact sheets 4, 7, 11, 21.)
f. Know and have faith in the United States and its future. (See Fact sheets 7, 13, 19, 20, 29.)

War News and Analysis.

Discussion should include the latest strategic developments on world battle fronts, the significance of all major operations, and their relationship to each other. Particular emphasis should be placed on the strategic mission of the division concerned, its components and the larger units of which it may be a part.

Nonmilitary News.

Covering general news, subject matter may range from developments of world and national significance in all fields to information of interest to troops (even of a minor nature) such as sports and personal items from the home front.

Explanation of Policies.

Policies of all echelons from company to War Department should be included in discussions. Every individual should know the reasons behind everything he is required to do, insofar as is consistent with military security. The practice of "telling them why" should be a continuous process carried on at all times in regard to all policies, but part of this period may be used for the explanation of policies not otherwise covered.

Local Information.

Information about the area occupied by the unit—data about geography, terrain, people, language, customs and general conditions—can be made available under appropriate circumstances.

Function of the Company Commander

Discussion Leader.

The company commander should preside at the weekly orientation hour insofar as tactical conditions permit, but he should not carry the entire burden of the discussion himself. He is not expected to be an expert on all phases of world developments or their meaning. He may call upon individuals who, by reason of their experience or education, are particularly fitted to supply information on special subjects. When such subjects arise, it is the company commander's function as discussion leader to draw upon the knowledge of all those in the organization who are well informed. Maximum participation should be encouraged.

Preparation.

Although the discussion or conference method lessens the immediate burden on the leader, it in no way diminishes the amount of preparation necessary. The discussion leader must be sufficiently informed to insure that all aspects of the subject under discussion are adequately presented. He should first read any material to be discussed, then make use of the questions supplied with the material (or draw up his own) in

order to stimulate audience participation. At the end of the period, he should summarize the discussion.

Opportunity.

The orientation hour provides for the company commander the opportunity to contact all of his men in a more direct, personal manner than is the case during normal training routine. It is his chance to stimulate them, to exert his proper function of leadership and to show them the "big picture" and their part in it. The way in which the meeting is conducted will be a direct reflection of the leadership qualities of the company commander. A well-planned, conscientious, capable handling of the meetings will make a lasting impression on the enlisted men, and increase their respect, loyalty, and confidence in the commanding officer.

Assistants.

Personnel

As many commissioned and enlisted orientation assistants in each company should be assigned as are needed to aid the company commander in carrying out his orientation duties. A minimum of four individuals should be so designated. Each should cover a separate theater of war (Western and Southern Europe, Eastern Europe, Pacific, Asia). Each will be thoroughly and constantly informed about all phases of the strategic situation in his assigned theater. These individuals must possess requisite qualifications of knowledge and interest. Preferably they should be college men of high (110 or more) AGCT score, thoroughly informed about world events, able to express themselves clearly before a group, and well qualified to lead discussions. They must be allowed adequate time for preparation.

Meetings.

Officers and enlisted men engaged in orientation should attend regular meetings to be conducted by the division orientation officer for purposes of preparation and instruction in orientation procedures and materials and for dissemination of information issued by the Information and Education Division.

Materials

Maximum use should be made of all orientation materials, maps, books, pamphlets, and mimeographed materials issued by the Orientation Office and carried as organizational equipment. They should be carried separately in such manner as to be available at all times, in garrison, in transit, or in the field.

Situation Maps.

Strategic situation maps of all major fighting fronts should be kept in such a manner as to reveal progress made during the daily news period and the orientation hour.

Maps of the following areas have been issued to all organizations in the orientation kits; they should be maintained currently and available at all times in garrison or field.

a. Europe and the world.
b. Pacific and the world.
c. France and southeast Asia.
d. European invasion coast and Balkans.

Care of Maps.

Maps of battle fronts should be covered with Duraseal to preserve them and to make possible maintenance of the situation. For transportation, maps may be folded and carried in regular flat map cases, or, preferably, rolled together. Expended cardboard shell cartons make excellent containers for rolled maps. Detailed diagrams of field expedients for posting maps and other orientation materials will be issued by the Orientation Office.

Newsmaps.

These weekly War Department releases, issued to each organization, contain valuable current maps and visual aid materials. Back copies of *Newsmap* should be maintained in a file for reference use.

Daily News

Summary and Discussion.

Not less than 15 minutes a day (as far as consistent with tactical conditions) should be devoted to summary and discussion of the news of the day, as distributed by division or as compiled by designated company orientation personnel from official radio reports or news bulletins.

Daily News Bulletin.

This bulletin should be posted daily as soon as it is received.

a. In garrison, it can be posted in the dayroom adjacent to maps and other orientation materials.
b. In the field, it should be posted in such a location as to be conspicuously available to all personnel. (If this procedure is tactically impracticable, other suitable methods of distribution to all personnel should be used.)

Displays.

Miscellaneous

In garrison, orientation materials should be displayed in dayrooms. Situation maps should be coördinated with news bulletins, current *Newsmaps,* clippings and pictures of action on each front, and maintained by a designated officer or enlisted man. In the field, materials should be displayed as indicated in field expedient diagrams to be issued.

Company Correspondents.

At least one enlisted man should be designated as correspondent for unit newspapers for the purpose of supplying information to be used in newspapers and facilitating distribution of such publications.

Off-Duty Education.

The off-duty education program of the United States Armed Forces Institute (USAFI) should be thoroughly publicized. All personnel should be informed of opportunities for off-duty education, and full assistance given to individuals who desire to enroll. The USAFI catalog and enrollment blanks are available at all times, and orientation assistants in each company should be familiar with all phases of off-duty education and available for consultations.

Continuity.

It should be emphasized that *orientation is a continuous process.* It cannot be limited to one hour a week. It must be carried on constantly. Every man should know why the job he is doing at that moment is important to his outfit, and to winning the war. "Tell them why" should be the motto and constant job of every officer.

"Smoke Gets In The

Early Use of Smoke in Warfare

FOR centuries artificial smoke has been produced by one means or another for military purposes.

That smoke tactics were known to ancient India is indicated in translations from Ramayana (2000 B.C.), such as:

> "And clouding the whole sky with smoke that effulgent one . . . hid himself from their gaze. And in that terrible darkness of clouds, began to make a downpour of arrows. . . ."

In 50 B.C., firing of damp straw to smoke out enemy positions was common. The Bible speaks of the Israelites being protected in their march to the Promised Land by a miracle smoke cloud. History records that Caesar and Pompey used smoke in landing operations.

Cavalrymen have long appreciated that dust clouds raised by horses' hoofs help conceal movement and give protection against hostile fire. Gustavus burned wet straw to provide the makeshift smokescreen that covered his crossing of the Lech in the face of Tilly. In 1704 the Blenheim Mist was utilized by Marlborough to surprise the superior-numbered French.

Introduction of firearms and their initial use of black powder enveloped battlefields in so much haze that special smoke operations were futile, but advent of smokeless powder again cleared the fighting atmosphere. During the American Civil War, Professor Shepherd of Yale University suggested the use of screening smoke to President Lincoln but the suggestion was not adopted.

Use of Smoke in World War I

World War I spurred the development of smoke as a troop screening agent. Early in that conflict a small British unit was enabled to withdraw from the La Basse canal defense by the old and simple expedient of burning a haystack. By 1916 some artillery smoke shells were in use, but it was not until the Battle of Arras, a year later, that the value of smoke screens for modern warfare became obvious. Smoke provided a flanking shield for an operation of the 15th Division, A.E.F. Artificial smoke figured in the Meuse-Argonne offensive. In one instance, Marines of the 2d Marine Division crossed the Meuse by resorting to a smoke ruse. Mortars established a screen upon which the Germans concentrated their fire while the "Devil Dogs" spanned the stream at another point. The British also combined smoke with gas shoots to confuse the enemy further.

Use by Germans in World War II

The Germans demonstrated the value of smoke in the current war when they blitzed the Low Countries. The Belgian fort of Eben Emael was taken in May 1940 with the aid of man-made fog. The Germans moved up smoke battalions which blanketed that stronghold so effectively that the aimed fire of the defending guns was disorganized. Under this cover, Nazi pioneer troops advanced close to the walls and employed flamethrowers to breach the ports.

The "impregnable" Maginot Line was cracked between Saaralben and St. Avold when the Germans screened a whole line of fortified hills, slopes, and even a nearby fortified village and totally obscured French observation. From a distance of a mile and a quarter, the Germans established a smoke barrage more than two miles long and about 30 feet high. The screen was maintained for two hours while assault troops worked up under the defenders' guns and around in back of the steel and concrete fortifications.

When the Germans reached the Marne in June 1940 the French were organized and prepared for stiff resistance. Suddenly the Germans opened up with two smoke battalions, and the startled French soon found their whole line of observation posts blinded. Believing they were subjected to gas attack, the French donned their gas masks. Meanwhile a German bridgehead was established, and extended. Within two hours resistance had ceased and the Germans were freely crossing the Marne. Even the Nazi assault troops who were first to cross suffered only negligible losses.

Area Smoke Screens—German, British and U. S.

It took the present conflict, with its development of the long-range bomber, to introduce the art of smoke camouflage for area protection. Besides hiding production facilities, this supplemental antiaircraft device also protects troop concentrations and communication centers, highways, waterways, and ports and cities.

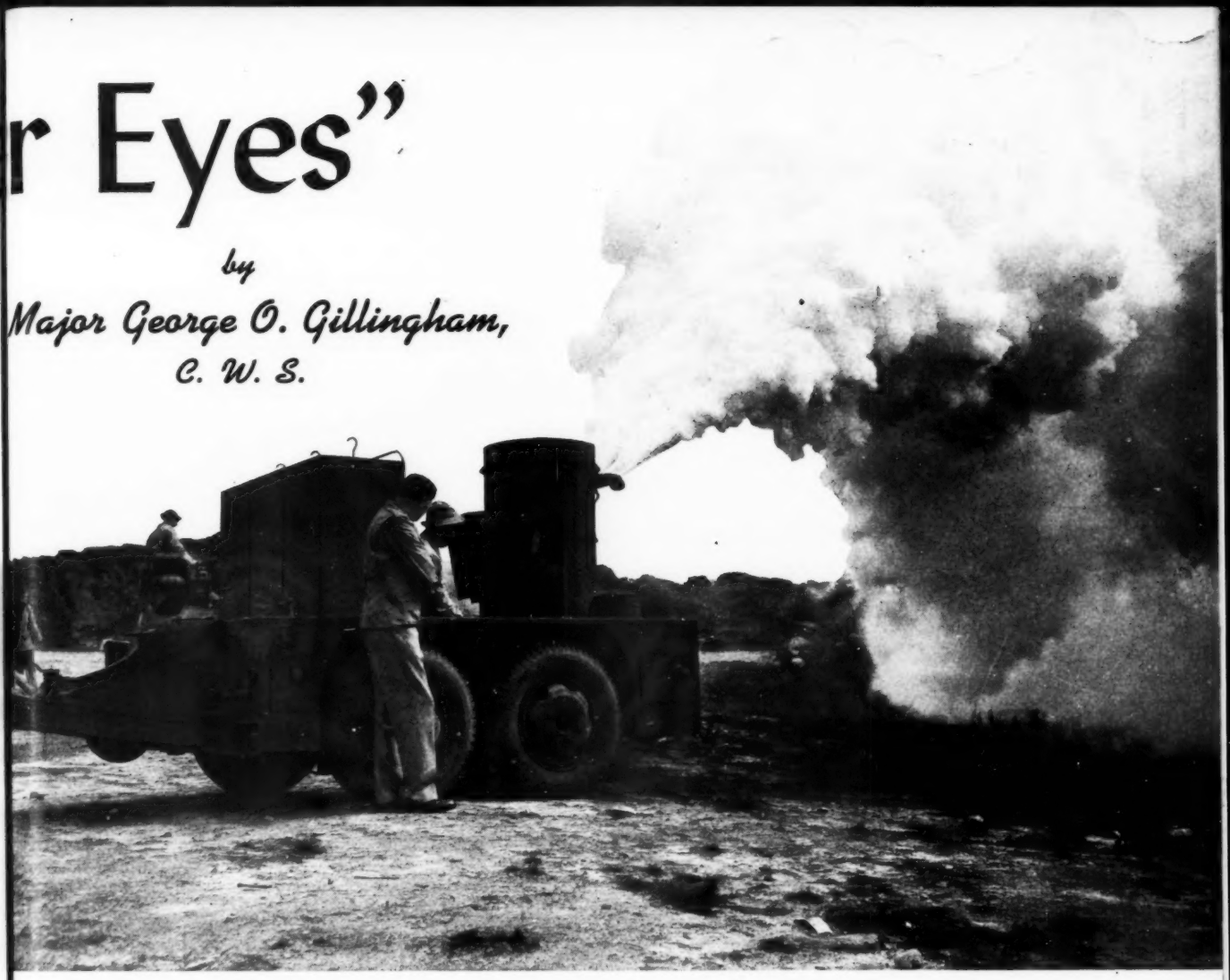
The Germans early recognized the effectiveness of area screens. Between June 1941 and April 1943 they placed smoke over vital ports in Germany, France, Norway, Italy, and North Africa. They also screened targets in Poland and Russia. They made good use of smoke to hide their warships *Gneiseau* and *Scharnhorst* before those vessels made their spectacular channel dash. In a raid on the battleship *Tirpitz* in Norwegian waters on December 16, 1942, Allied flyers noted that "smoke trails rose from antitorpedo booms projecting from the *Tirpitz*—presumably from generators attached to the boom floats." Smoke was also used to screen the French battleship *Jean Barte* at Casablanca, but a wind blew rifts through the clouds which exposed the vessel and permitted it to be shelled.

In the desperate days after Dunkirk, when the *Luftwaffe* offered its greatest menace to England, the Brit-

er Eyes"

by

Major George O. Gillingham, C. W. S.



The Army's biggest smoke producer is the Mechanical Smoke Generator M-1, which can screen a square mile area in 10 minutes. The artificial smoke is made from oil spray mixed with steam, is harmless to eyes, skin, lungs and clothes.

ish utilized smudge pots burning crude oil, such as those used by fruit growers to ward off killing frosts. Later they developed smoke pots and smoke machines similar to American smoke-producers.

British smoke came into prominence when the war shifted to the Middle East. Their first screen in this area was raised over Malta on May 10, 1942. It is significant that this was the day that aerial supremacy over that island passed from German to British hands. Benghazi was successfully screened with captured German and Italian smoke equipment. The British used smoke bombs dropped from aircraft to permit destroyers and landing craft to remain close inshore during the Dieppe raid.

Smoke has furnished the modern armor for many operations in North Africa, Italy, the Pacific and other areas. Because this war has proved beyond all doubt that smoke screens are a definite factor in reducing casualties as well as being effective for accomplishing various missions, the call for smoke and more smoke is keeping pace with the mounting tempo of the Allied offensive. It is interesting to note that the first Chemical Warfare Serviceman decorated in North Africa was cited for a smoke operation.

Smoke in Italy—Salerno, Volturno, Naples

At Salerno the worth of smoke for hiding beach landings was so pronounced that from that time on it has been ordered in increasing quantity. As a result, "Make smoke!" is a recurring order sounded from the Italian theater to those Pacific islands now being liberated.

A brilliant yellow moon shown on the Volturno River Valley of Italy on the night of October 13-14, 1943. General Mark Clark's Fifth Army was on the south bank of the river, facing crack German units organized in depth on the other shore. Every Nazi gun along the 40-mile front was trained on the stream, for the enemy knew what was coming.

As H-hour drew near, our soldiers took up positions in the fringe of woods bordering the flat ground along the south bank. At 1:59 A.M., the tornado of shellfire

which constituted the American artillery preparation ceased. There came a moment of deadly silence, which ended with a burst of American fire. The whole stretch of the northern bank resounded with bursting smoke shells, each belching a blob of white smoke like a string of blossoming cotton balls. The lazy billows, dead white under the frosty moon, rose to form tall pillars. The smoke gradually thickened in the chill north wind to impose an opaque curtain between the two forces.

Behind that cover an initial wave of American assault troops made their way to the river, and waded, swam or paddled to the German side 100 yards away. At other points combat engineers spanned the stream with bridges built under cover of other smoke screens to carry the main body of men across. Thus did white phosphorus shells from artillery, from 4.2-inch chemical mortars, and from floating smoke pots set adrift in the current make it possible for the Fifth Army to cross the Volturno with a minimum of casualties.

An alert smoke crew so effectively blanketed Naples one day last November that a wave of enemy bombers, unable to spot their targets, jettisoned their loads at random, and most of the bombs fell harmlessly into the sea. When our "smoke gets in their eyes," the foe cannot see to bomb with precision. After a fruitless raid on an Allied port, one enemy airman was heard to radio back to base that he couldn't locate the target because of that "damned smoke," or German words to that effect.

Smoke in the Pacific

On the other side of the world the first recorded American paratroop assault under cover of smoke took place in the Markham River Valley, near Lae, New Guinea, on September 5, 1943. Spraying smoke from tanks, fighter planes walled off the Japanese forces. Three 4,000-foot screens were released along wooded areas where the Japanese might be lurking. The smoke settled to the ground, then mushroomed up to a height of 400 feet. Following the smoke planes came transport planes which disgorged paratroops on three sides of their objective. By the time the smoke dissipated, the parachute troops had organized for a successful attack on the airfield.

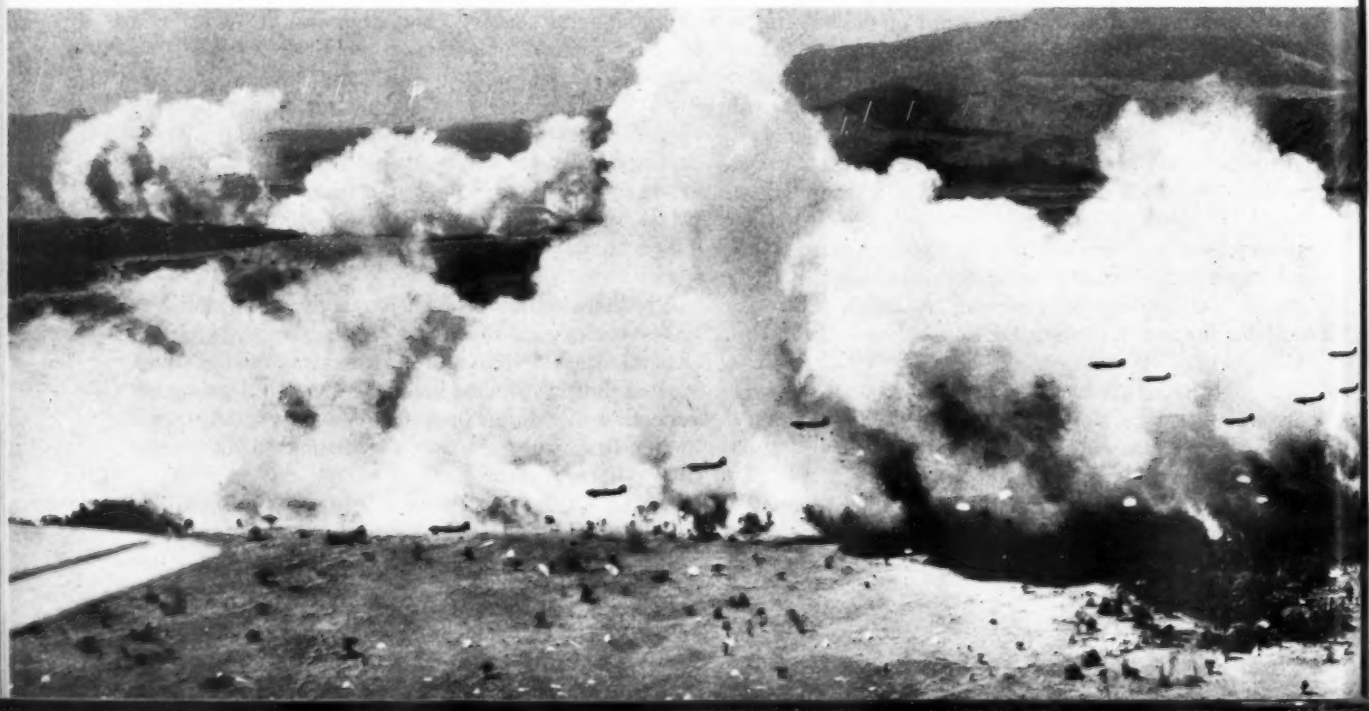
Japanese shipping at Rabaul, New Britain, was successfully attacked with the aid of smoke. Bombs from planes marked off the harbor with two dense smoke walls, each three-quarters of a mile long. These formed a large artificial arena in which the air assault on the marine targets was conducted with little interference from shore batteries.

Methods of Making Smoke

The Chemical Warfare Service makes smoke in four ways. One is by smoke pots, which use heat to vaporize chemical mixtures. Another method is by mechanical smoke generators, which mix oil spray with steam. A third is liquid chemicals sprayed from tanks attached to the underside of planes; and the fourth embraces shells, bombs and grenades filled with white phosphorus which reacts on exposure to the air to form dense white smoke.

The Army's biggest smoke producer is the mechanical smoke generator, which was non-existent five months before the invasion of North Africa. The truck-mounted type, resembling a "Gay Nineties" fire engine, can with-

Paratroops landing at Lae, New Guinea, September 5, 1943, were protected by massive smoke walls sprayed from tanks attached to fighter planes. This airborne attack, which netted a Japanese air strip was a highly successful undertaking.



Chemical Warfare troops trundle the 4.2 chemical mortar through a smoke screen. Mortar, which has been nicknamed the "goon gun," can fire 20 rounds a minute up to two and one-half miles; fires either smoke or explosives.

in 10 minutes screen a square mile area. The mechanical generators are operated by chemical smoke generator companies, deployed around an area in accordance with wind and other factors. The port of Algiers, for example, was so well protected by this apparatus that for a period of 14 months, although convoys were entering and leaving almost daily, no serious damage was done by enemy bombers.

A newer type fog machine is no larger than a foot locker, weighs only 180 pounds, and can produce almost half as much haze as its larger brother. With favorable wind conditions, this bantam generator can set up a screen 4 or 5 miles long and 200 yards wide at the far end. It is capable of being operated in jeeps, scout cars and other light vehicles, and can be hand-trundled over rough terrain.

"If any apparatus could be decorated, I think it should be the CWS smoke pot!" declared one officer in North Africa. He referred to the pail-like smoke contrivances which come in several sizes, from the 11-lb. pot, which burns about 6 minutes, to the 30-lb. pot, which burns about 20 minutes. They are used by themselves or in conjunction with mechanical smoke generators. These small pots have been particularly useful in marking off beachheads for landings in the Pacific theater. There is also a floating smoke pot, not unlike a 5-gallon pail in appearance, which weighs 27 pounds and burns for from 10 to 15 minutes.

In one engagement a chemical weapons battalion set out hundreds of smoke pots which produced a screen 6 miles long and 2 miles high to mask the movement of supplies along a critical highway in Italy. Another chemical weapons battalion, operating 170 tons of smoke pots, kept a smoke blanket on 12 square miles of territory for 3 consecutive days.

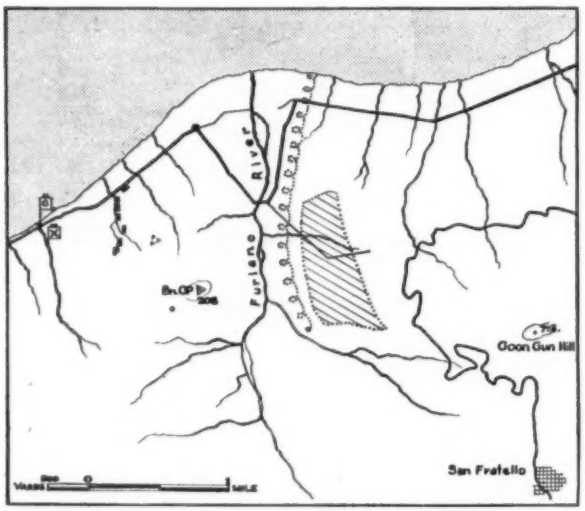
Smoke grenades—or "canned smoke"—weigh less than 2 pounds and burn for 2 minutes. The white phosphorus grenades, besides having antipersonnel effect, can be used for establishing small screens and for plugging holes in larger ones. Then there are grenades which give off smoke in various colors for signaling purposes, to designate targets, mark off vehicle routes, etc.

Smoke-producing white phosphorus is used in aerial bombs and artillery shells. The most effective WP weapon, however, is the versatile 4.2 chemical mortar, which can fire 20 rounds a minute at ranges up to two and one-half miles. This mortar is, in effect, a 3-edged sword. It fires smoke or high explosive with remarkable accuracy. This muzzle-loading rifled mortar was affectionately dubbed the "goon gun" by chemical troops who first used it in Sicily. The chemical mortars functioned so effectively at Mount Fratello, Sicily, in August 1943 that this engagement is popularly referred to as the "Battle of Goon Gun Hill."

Gunner of a chemical weapons battalion on Bougainville adjusts elevation and deflection of a "goon gun" with adjustable bronze sight. Faint wisps of smoke from previous round can be seen curling from rifle barrel. The mortar has sunk deep into Bougainville's volcanic soil under impact of constant firing. Sandbags on baseplate give stability.

A chemical weapons battalion can lay three and one-half tons of phosphorus in 2 minutes. Smoke from "goon guns" have thrown enemy tanks into confusion, covered bayonet charges and withdrawals, and blinded enemy observation posts. These mortars are so accurate that their users claim they can "hit a dime" with them. In fact, one gun did drop an HE shell into a German tank for a "hole-in-one!"

One mortar screen in Sicily, lifted only occasionally to permit strafing by Allied dive bombers, was maintained along a thousand-yard front for 14 consecutive hours. On another occasion two chemical mortar pla-



SMOKE FEST AT GOON GUN HILL

This section of Sicily's north coast shows (left to right) 2d Chemical and regimental CP's, 4.2 positions, battalion OP, Furiano stream bed, and Goon Gun Hill from which Nazis looked down on whole terrain. Black lines are roads. Dotted loops near river represent 3,500-yard screen that rolled up Goon Gun Hill morning of 6 August. Shorter screen over most of the same line protected two battalions pinned down that afternoon on German side of river. OP for this screen is shown by triangle near mortars. Shaded area represents smoke-mass; for 14 hours on 7 August, mortars pumped WP into Nazi positions in this area.

toons set up a "leap-frog" screen for 43 minutes to cover an infantry advance. When two infantry battalions became trapped in Sicily, smoke made by a chemical battalion enabled the infantrymen to shift position and avoid annihilation or capture. It was for operations such as these that chemical weapons personnel here received many decorations and citations, personally and as units.

Value of Smoke in Warfare

While the use of smoke in battle is almost as old as history, its skilful employment in enormous quantities is a startling development of World War II. The implication of this form of military protection in terms of effective action, of lives saved and wounds avoided, is a constant spur to the Chemical Warfare Service of the Army Service Forces to develop ever better materials and procedures.

Tests have shown that the aimed fire of men blinded by smoke is only one-fourth as effective as the aimed fire of men in the clear firing into smoke. It was found that riflemen under ideal conditions scored approximately 55% hits. With their targets obscured by smoke, they obtained only 12 hits, and when the firing range was blanketed with smoke their hitting average dropped to 3%.

Thus, smoke which is the bane of peacetime atmosphere has become a life and property saver in war. The same inventive genius which worked to curb its nuisance to communities and industrial plants in peacetime has adapted it to protecting soldiers and their supplies in battle.

Through collective scientific effort, military smoke furnishes the modern armor for many troop operations. By the same token, man-made fog supplies a cloak of invisibility for men and matériel which minimizes enemy bombing or renders it ineffective. "What you can't see, you can't bomb" is the basis of this antidote to the long-range bomber.

The practicability of smoke blanketing is summed up in the fact that while airplanes can look *behind* a smokescreen, they cannot look *under* it. For this reason, smoke has become a new type of camouflage for important objects and areas far behind the front lines as well as providing a protective cover for troops in action.

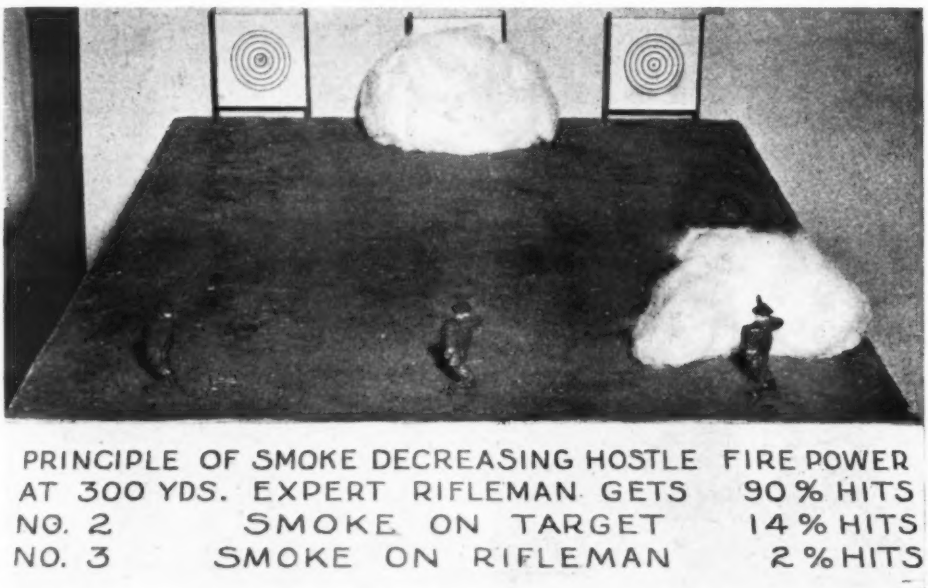

PRINCIPLE OF SMOKE DECREASING HOSTLE FIRE POWER
AT 300 YDS. EXPERT RIFLEMAN GETS 90% HITS
NO. 2 SMOKE ON TARGET 14% HITS
NO. 3 SMOKE ON RIFLEMAN 2% HITS

Chart forms a graphic presentation of the results of rifle tests conducted with and without smoke hazards at one CWS installation.

Something New in Tank Smoke

by Captain Arthur L. Paddock, Jr.

THE use of smoke by mechanized cavalry and tank troops to influence tactical maneuver is laid down in official War Department field manuals, but because of variations in matériel, tank troops need to understand a few fundamental facts.

For some time the standard smoke shell for tank guns contained white phosphorus, a chemical which has both an incendiary and a screening effect. Experiments have shown that the white phosphorus shell is more effective than HE against dug-in infantry. It is safe to say that high-trajectory weapons—mortars, howitzers, and the like—have a greater potential value than flat-trajectory tank guns when firing white phosphorus shells. This is true partly because of the physical properties of white phosphorus and partly because of the ballastics of the shells concerned.

The principal objection to WP shell for tank guns is that it "pillars." The shell is easy to control for range and deflection, but the screen which originates from the shell does not form low enough to the ground to effect adequate, prompt screening. The screen develops in billowing clouds some twenty or thirty feet above the target.

The new Shell, Smoke, HC, BE (base emission), M89, for 75mm tank guns, is an improvement over the WP shell. The smoke is a hexylchlorethane mixture and does not pillar. The shell has a blunt nose with no ogive and a muzzle velocity of about 800 feet a second, as compared with the 2000 feet a second muzzle velocity for Shot, APC, M61. Because there is no ogive, the shell bounces on firm terrain from 100 to 300 yards away from the point of strike. The soldier learns more about how difficult it is to control as he fires more M89 shells, for they are as skittish as a yearling colt.

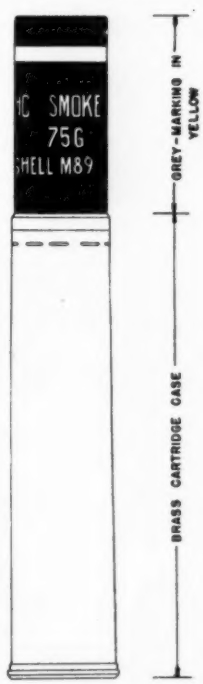
Smoke shell is a weapon of the unit commander. Used indiscriminately (present stowage calls for about 10 rounds per medium tank) it is soon wasted. The shell should be fired by the section or platoon, preferably the latter. About three or four rounds per gun fired in about one and one-half to two minutes develops a satisfactory screen over a frontage of from 400 to 500 yards. The shell cannot be fired accurately at ranges much over 1,600 yards. Each round burns for about 3 minutes.

The technique of fire in various winds is dictated by common sense. In a head wind, fire into or just behind the target. In a flank wind, fire so that the screen will drift onto and just in front of the target. Tankers have found that a crosswind of from 3 to 5 miles an hour velocity gives best results. When the wind velocity is high (over 10 mph) the gunner fires faster than when it is low (3 to 5 mph).

The ballistics of the shell clearly direct that M89 smoke shell be fired by the section or platoon and *not by a single tank.* To build up a screen requires at least two minutes. Therefore, smoke should not be used against antitank guns which have already opened fire on attacking tanks.

The M89 smoke shell is not the only screening agent available to the tank soldier. In mechanized cavalry squadrons the assault gun troop can fire smoke missions. In the tank battalion, the 81mm mortar platoon, which carries a preponderance of WP shell, is available to the commander for smoke missions. Experiences in Africa, Sicily, Italy, and on other fronts have proved its worth. Commanders may request the firing of smoke missions by supporting artillery.

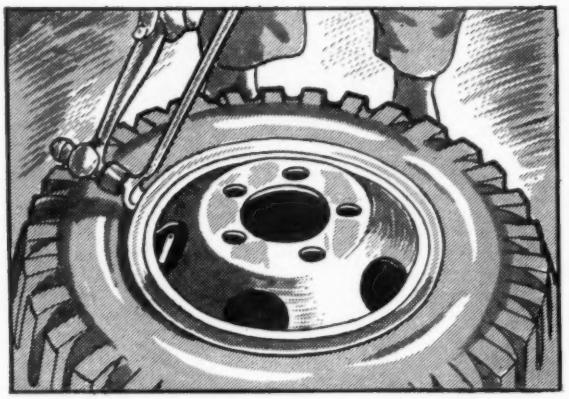
For the use of the individual tank commander there is the 2-inch smoke mortar. This is a British-developed weapon which is mounted in the medium tank turret. The mortar is used when the tank needs a quick, close-in smoke screen to conceal its movement in an emergency or to permit its crew to dismount from a disabled vehicle without being seen. The mortar is fired by the cannoneer (loader) with fire orders issued by the tank commander. He may fire at short (20 yards), medium (60 yards), or long (120 yards) range, depending on the adjustment of the gas pressure regulator. TC 20, War Department, 31 March 1944, covers the weapon in detail.



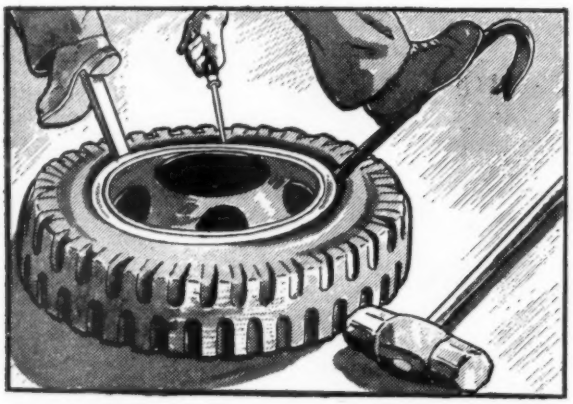
It is clear that tank troops have a great variety of smokes available. Smoke properly used with initiative and dispatch may not win the battle, but it can get you there in time to pour in the HE without stopping some carefully aimed armor-piercing projectiles from an 88.

DO'S and DON'TS on TIRE CHANGING

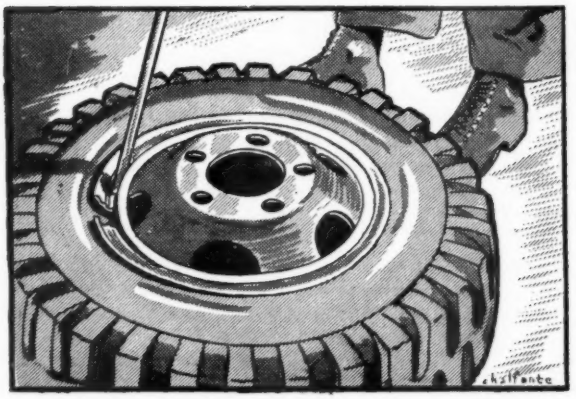
REPORTS indicate that critically scarce tires and tubes are being damaged, sometimes beyond repair, by improper changing methods. The introduction of synthetic rubber, which tears more easily, has made the problem even more serious.



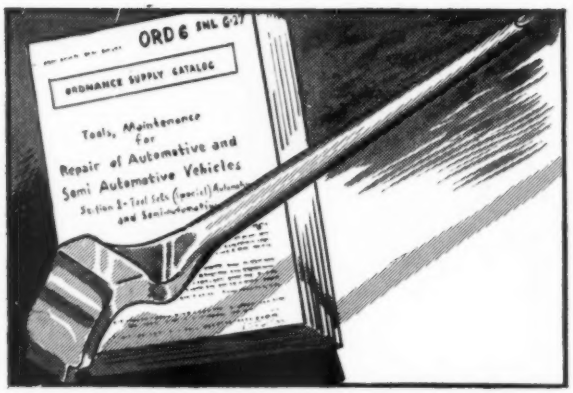
The military type tire iron can be used for almost every tire changing operation. Here it is being used to free a tire casing from the rim.



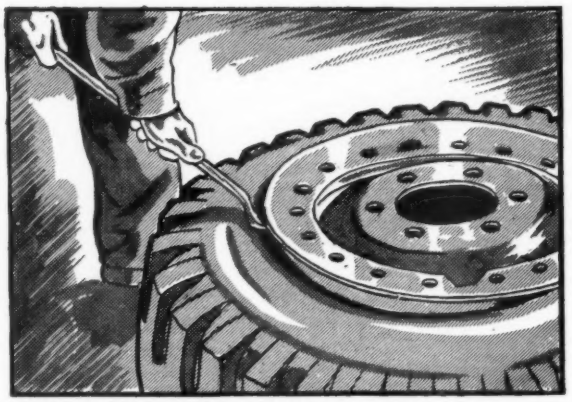
DON'T USE broken spring leaves, pry bars, screwdrivers or sledge hammers to remove or install tires. They can damage tires and tubes beyond repair.



The tire iron is a specially designed, universal tool. It is safer for both the user and the tire. Here it is being used to remove a split lock ring.



DO USE Iron, Tire, Military Type, Federal Stock No. 41-1-774 which is authorized (2 per tool set) by SNL G-27 and SNL G-347.



Removing a divided rim, like all other operations, is simple and safe with this tire iron. If you do not have this better tire iron, requisition now.

Centralized Training

For the Cavalry Reconnaissance Troop

by 2d Lieutenant Ross S. Hadfield, Cavalry*

THE cavalry reconnaissance troop of an infantry division has a very definite and difficult job to perform, both in training and in combat. Whereas many soldiers have a very specialized job, the cavalryman of a reconnaissance troop must be proficient in many duties. Besides being trained in cavalry tactics and mechanized warfare, he must be trained also in infantry tactics, engineer problems, radio, intelligence, and ranger tactics—with a knowledge of artillery firing included.

The training of the individual cavalryman within the reconnaissance troop involves many problems. Beside the diverse schedule, training is made more difficult by the setup of a single troop, with no aids from a squadron or regimental headquarters, in the training schedule. Practically all training aids, as well as instructors, are from the troop itself. This setup of instruction is further complicated by the number of meetings called by the division staff. Although essential in the operation of the division as a whole, these meetings necessitate the absence of troop and platoon officers from their organization.

Such factors present strong arguments for centralized training in the training schedule. If centralization is not carried out, it results, in many instances, in very uninteresting and inefficient instruction. This type of class does not necessarily mean that the platoon or troop officer is lacking in instructional ability, but usually is because he is given no time in which to prepare the many different subjects called for in the training schedule.

If, on the other hand, centralized training is maintained within the troop, each officer has fewer subjects to prepare and should have more time in which he can secure those training aids so necessary to present an interesting and efficient class. The results are a better trained troop in a given time.

It may be argued that all officers should be equally proficient in teaching all subjects, and that this training is for the officer as well as the enlisted man. That all officers have equal ability in all subjects, is never the case. So, the individual officer should be given those subjects in which he is best qualified to teach, and his own training in other subjects supplemented during officer's school, which in most units is held in the evenings.

It is the opinion of foremost educators, and it is brought out in all military schools, that to present a subject efficiently more time is required for the preparation than the actual presentation. This condition is not possible with the majority of training schedules found in most of the reconnaissance troops in an infantry division.

If centralized instruction is to be used in the training schedules of the troop, the executive officer must take into consideration the objective of the training schedule, the state of training, subjects to be taught, time to teach them, equipment and facilities available, and the ability of the different officers to present different subjects. He then bases his assignment of the training subjects to be presented on those instructors available for any given time.

A valuable aid for the instruction of the troop can be found in a "Status of Training" chart. It must be remembered, however, that any chart maintains its value only as long as it is kept up to date. The following chart is presented as an example, although it is not complete because several basic subjects and some specialized subjects not applicable to each particular troop, are not shown.

STATUS OF TRAINING

Individual Weapon																							
1903								M1								Pistol							
*1. Q	*2. FAM	*3. FF	*4. NF	*5. AT	*6. MT	*7. TRA		Q	FAM	FF	AT	MT	TRA	NF		Q	FAM	FF	TRA				
Carbine								Submachine Gun								Crew served Weapons: Light Machine Gun							
Q	FAM	FF	NF	AT	MT	TRA		Q	FAM	FF	AT	NF	MT	TRA		Q	FAM	FF	NF	MT	AT	TRA	
Cal. .50 MG								BAR								57mm. (37mm.)							
Q	FAM	FF	NF	AT	MT	TRA		Q	FAM	FF	AT	NF	MT	TRA		Q	FAM	FF	NF	MT	AT	TRA	
60mm.					81mm.																		
Q	FAM	FF	NF	TRA		Q	FAM	FF	NF	TRA													
Special Courses																							
Infiltration		Grenades													Close combat								
Day	Night	Hand	Rifle	Sticky	Molotov	Improvised	Rocket																
Demolitions																							
Combat in Cities		Fox holes and tanks		Camouflage		Message Writing		Combat Orders		Hand Charges		Crater Charges		Timber Demolition									
	Mines								Chemical Warfare														
Pillbox Demolition	Anti-personnel		Anti-tank		Booby Traps				Identification			First Aid		Decontamination									
	Laying and Removing		Laying and Removing		Laying and Removing																		
		Radio																					
Gas Chamber	Use of Smoke	Voice Procedure		Code Transmission		Semaphore			Panels			Pyrotechnics											
	Motors																						
Radio Repair	Driving																						
	¼ ton		Half-track		Armored Cars			2½ ton			Motorcycles			Field Expedients									
Mechanics										Reconnaissance													
1¼ Ton		Half-track		Armored Car		Motorcycle				Bridge		Road		Night		Day							
Intelligence																							
Identification of Airplanes				Identification of Armored Vehicles						Characteristics of Foreign Languages													
U.S.	British	German	Japanese	U.S.	British	German	Japanese			British		German		Japanese									
										Map Reading													
Organization of Foreign Armies		Characteristics of Foreign Personnel								Appreciation		Azimuth & Direction											
German	Japanese	German	Japanese																				
Conventional Signs		Relief & Profile		Aerial Photos		Use of Compass		Use of Field Glasses		Foreign Maps		Sketching											

*1. (Q) Qualification.
*2. (FAM) Familiarization Target.
*3. (FF) Field Firing.
*4. (NF) Night Firing.
*5. (AT) Aerial Target.
*6. (MT) Moving Target.
*7. (TRA) Transitional

★81st Cavalry Reconnaissance Troop.

Book Reviews

THE ART OF WAR. By Sun Tzu. Military Service. $1.00.

FREDERICK THE GREAT, INSTRUCTIONS TO HIS GENERALS. Military Service. $1.00.

REVERIES ON THE ART OF WAR. By Marshal Maurice de Saxe. Military Service. $1.00.

Since September Military Service Publishing Company has added three books to their shelf of valuable *Military Classics.*

The Art of War by Sun Tzu, written about 500 B.C., is the oldest military treatise in the world. The tactics and strategy of the author place a high value on maneuver. His writings, based on principles, have retained their original importance for military men for 2,400 years.

Copies of Frederick the Great's *Instructions to His Generals* were given to those fifty officers in his army who were considered models. The recipients were bound by oath not to take these orders into the field. The violation of this oath by General Czetterliz resulted in the capture of his copy by the Austrians in 1761 and its subsequent publication in German, French, and later in English

Frederick's tactics were based on mobility. Among the innovations attributed to him are: the division of armies so that they could march in a number of columns with less fatigue; the use of flank marches; the oblique order; the lightening of the cavalry; increased mobility of artillery and the development of horse artillery.

Reveries on the Art of War, published posthumously in 1757, was written by Maurice de Saxe, not for publication but to "amuse and instruct" himself.

Marshal de Saxe was far in advance of his time in tactical conceptions and technical vision. He took into account the influence of the human heart on battles, and recognized the need for many reforms in the handling of military personnel as it existed at that time. He was particularly interested in reorganizing the armies after the Roman fashion, modernized, with legions and smaller units. His scheme was the forerunner of our present division organization.

* * *

NORMAL LIVES FOR THE DISABLED. By Edna Yost in collaboration with Dr. Lillian Gilbreth. Macmillan Company. $2.50.

For 20 years Dr. Gilbreth was an industrial engineer who practiced in partnership with her husband. Together they wrote *Motion Story for the Handicapped* during the last war.

This new book, *Normal Lives for the Disabled,* is written *to* the disabled, not *of* them. Its philosophy is based on the premise that "Whether he has two arms or no arms, the man himself is more important than any of his parts. . . . That man had a certain attitude toward life. He still has it, even though it may be hidden by depression or by the scoffing crust of "What's the use? that so often accompanies shock. . . . Only that deep inner attitude, in the vast majority of cases, is capable of crippling a man permanently."

In order to illustrate their points the authors have drawn on actual cases of men who have readjusted, and nothing is so encouraging to men as to know that others have trod a path before them.

There is no sentimentality here, no crutch to lean on—but facts which, when faced frankly, will be of permanent value.

* * *

LEE'S LIEUTENANTS, VOLUME III. By Douglas Southall Freeman. Charles Scribner's Sons. $5.00

With the publication of this volume, Dr. Freeman concludes his monumental *Study in Command of the Confederacy.* Volume I covered the corps and divisional commanders of the Army of Northern Virginia from Manassas to Malvern Hill; Volume II, from Cedar Mountain to Chancellorsville; and Volume III tells the tragic story from Gettysburg to Appomattox.

One of the most complete military studies in command ever written, *Lee's Lieutenants* not only recreates the men and the operations in which they participated, but analyzes the military lessons involved. Thirty years of research in this period have revised some established views and reappraised men in the light of unpublished papers.

Dr. Freeman's work, with its voluminous maps, appendices and bibliography takes its place among the most important biographical and military books yet published.

* * *

GREAT SOLDIERS OF WORLD WAR II. By Major H. A. DeWeerd. W. W. Norton. $3.75.

Major DeWeerd's collection of interesting little biographical sketches is more notable for its omissions than its inclusions. The author's defense of his exceptions of Stalin, Tito, and Marshall merely substantiates the fact that selections of outstanding characters in an era cannot justly be made until the era is completed.

The reader is constrained to ask—if Churchill—why not Roosevelt? If Gamelin, with his refusal to accept criticism, was a "great" soldier, what of Lord Louis Mountbatten, whose able coördination of all services has been one of the innovations of this war? Where are Shaposhnikov, Rokossovsky, Alexander, Stilwell, Wingate, and many others? Can an author classify civilians as "soldiers" and not include the air and naval men who have played no small part in this war's military operations?

Although this book offers some interesting comparisons of the superficial differences between some of the better known figures in this war, it could hardly be considered an authoritative analysis of the fundamentals of military science.

BRAVE MEN. By Ernie Pyle. Henry Holt & Co. $3.00.

That Ernie Pyle's books are as eagerly awaited by his reading public as his daily columns is amply evidenced by the tremendous pre-publication sales of *Brave Men*. The demand for copies to go overseas was so great that a number of the books were released more than a month before the publication date in order to meet the October 15th mailing deadline.

Ernie Pyle has lived in the mud, listened to the artillery barrages, seen the dead and dying, gone unwashed, unshaven and hungry in the war that he hates with the men he loves and understands. The highest praise that can be given his latest book is that it continues to tell the story of these men from Sicily to Normandy with the same fidelity that *Here Is Your War* told of them in the earlier campaigns.

To miss reading Ernie Pyle's books is to miss a vital part of the experience of living in this era.

* * *

PARTNER IN THREE WORLDS. By Dorothy Duncan. Harper & Brothers. $2.75.

As a biography, the story of Jan Rieger's reactions to life in "three worlds" – Austro-Hungarian domination, Czech independence, and American democracy–presents important lessons in the psychology of middle-Europeans. Few Americans have even a superficial knowledge of the vast difference in thinking that lies between ourselves and the inhabitants of the little Czech democracy fathered by Wilson. That this gap be bridged is of supreme importance if we are to be of real assistance to these people in the future.

Partners in Three Worlds is as fascinating as a novel. Miss Duncan has used the first person to great advantage in telling the vivid story of a life that developed to a high pitch in an era that lent itself to full living.

* * *

NODS AND BECKS. By Franklin P. Adams. McGraw-Hill. $2.00.

With his usual wit, Mr. (Information Please) Adams rambles on about many subjects familiar and unfamiliar. Compiled of excerpts from the *New Yorker, Diary of Our Own Samuel Pepys* and *The Coning Tower, Nods and Becks* provides amusing light reading from which, incidentally, the reader will probably absorb some of the author's store of useful and useless information.

* * *

THE AMERICAN RIFLE FOR HUNTING AND TARGET SHOOTING. By C. E. Hagie. Macmillan Co. $1.95.

The American rifle has been an integral part of our history. It has served in founding, protecting and expanding the nation. Dr. Hagie has written a basic standard book to instruct those unfamiliar with the many uses of the rifle. Separate chapters describe the various types of rifles and ammunition and the purposes for which they were designed. One chapter deals with the care of game in the field.

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Order these books from

The Cavalry Journal

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THE ISLAND. By Captain Herbert L. Merillat. Houghton Mifflin Co. $3.00.

The Island is a history of the 1st Marine Division on Guadalcanal from August 7 to December 9. Guadalcanal was our laboratory of jungle warfare and its conquest set the pattern for the subsequent island campaigns.

Captain Merillat accompanied the 1st Marine Division when it left Norfolk for New Zealand. He landed on the beach of Guadalcanal with Major General Vandegrift and left when the division was relieved on December 9. The time and care that has been expended on this excellent and detailed account of the action in this critical campaign makes it a valuable contribution to the history of military tactics.

Readers of The CAVALRY JOURNAL will recall the excellent article, "Landing Operations" by the then Lieutenant Merillat, published in the September-October, 1943, issue of the JOURNAL. This article described the training for amphibious operations that bore fruit in the Guadalcanal landings.

INVASION JOURNAL. By Richard L. Tobin. E. P. Dutton. $2.00.

In the last few months a number of books have been published on the Allied invasion of France, although it is too early to suppose that this event can be covered in any detail at this time. Mr. Tobin does not endeavor to give a day-to-day account of military activity, but confines himself rather to incidents and commentaries. As a journal of the invasion, the result is a disappointment. However, for the reader who enjoys enlightening conversation and salient observations on conditions and trends of opinion, there is much interesting material.

NAVIES IN EXILE. By A. D. Divine. E. P. Dutton Co. $2.75.

A. D. Divine, author of *Firedrake,* and better known to American readers as David Rame, has written the magnificent saga of the navies of the conquered countries.

With a quiet determination the seamen of Poland, Norway, Holland, France, Yugoslavia, Belgium, Denmark and Greece refused to yield their ships to the conquerors of their land. The story of each of these navies, its rebirth and growth in the service of the Allied Nations, makes interesting reading, particularly for those who love the sea.

THE BATTLE AGAINST ISOLATION. By Walter Johnson. University of Chicago Press. $3.00.

Isolationism was born of reactionary elements following the last war. It is from 1918 forward that Walter Johnson carries his history of the fight against the philosophy that America could live immured from the rest of the world. In the belief that this philosophy is still a dangerous factor, Walter Johnson calmly and intelligently presents his facts. His book will appeal to those who are not attracted by a sensational exposé, but are willing to be convinced by facts and logic.

THE SECOND CHANCE. Edited by John B. Whitton. Princeton Press. $2.50.

This book on America and the peace seeks to establish the basic principles which will govern America's relation to the rest of the world and a structure of world peace—whether the effort to maintain peace is primarily through a formal world organization or through other means. A historian, three political scientists, an economist, an authority on the measurement of public opinion, and a religious philosopher have worked together on the volume.

These scholars have not only contributed chapters written from their several points of view, but also have subjected each chapter to the illuminating criticism of the entire group. The authors do not agree on all points—and the nature of their varying opinions is one of the most interesting and valuable aspects of the book.

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